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ABSTRACT

This paper examines the expansion of higher education in Taiwan from 1950 to 1994, looking first at the patterns of the expansion and, secondly, attempting to account for these patterns. Higher education in Taiwan is defined as general universities and colleges, institutes of technology, and junior colleges with governance of the system under the control of the Ministry of Education. The study reviewed major historical events and examined documents and the literature concerning patterns of expansion in the number of institutions, in the number of students enrolled, and in expenditures. The study then reviewed the state's stated reasons--economic concerns, educational quality, social demands, and equal distribution of resources--for regulating expansion of higher education, and compared these reasons with other models of educational expansion and with the actual results achieved. The paper concludes by taking issue with the state's official position and suggests that the primary reason for its controlling growth was to keep unemployment rates among college graduates low. Further studies to examine educational policy making and educational supply and demand models are suggested. Appendices illustrate the structure of the Taiwan school system, list historical events related to higher educational expansion, list official documents reviewed, and provide graphical displays of trend data. (Contains approximately 100 references.) (CH)

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This paper was presented at the annual meeting of the Association for the Study of Higher Education held in Memphis, Tennessee, October 31 - November 3, 1996. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Higher Educational Expansion in Taiwan from 1950 to 1994----- Patterns and Explanations

Li-yun Wang

This paper examines the patterns of higher educational expansion in Taiwan from 1950 to 1994 and seeks to account for these patterns of growth through document and literature reviews. The growth of Taiwan's higher education was mainly accomplished through two periods of dramatic increase. The disproportional rates of increase between public and private schools and vocational and general tracks have great impact on the hierarchical system of higher education in Taiwan. The patterns of growth of Taiwan's higher education are better understood from the demand model, which focuses on the role of the state in regulating the growth of higher education. The state controlled the growth of higher education out of the interests in maintaining the authority and legitimacy of the state by keeping the unemployment rates of college graduates low and enhancing the prestige of public higher educational institutions. Social demands for higher education and the equitable distribution of higher education received greater attention only when the interdependence of the state with the environment increased. Experiences from Taiwan's higher educational expansion also suggest that the models of educational expansion need to take into consideration the level of education as well as the political structure where the educational expansion occurred.

Research Questions

Higher education in Taiwan has expanded rapidly during the past 45 years. In 1950, there were only seven higher educational institutions. By 1994, that number had climbed to 130. In 1950, only 6,660 students were enrolled in postsecondary institutions. Forty-five years later, that number was more than 100 times higher. Even when the growth in population is taken into consideration, the growth in the size of the student body is still dramatic. In 1950, there was less than 1 college student per thousand people. In 1994, that ratio was 37 times higher. The growth in higher education has a significant impact on educational opportunities, social mobility, and social equality.

This paper seeks to describe and explain the quantitative changes in Taiwan's higher education from 1950 to 1994. There are two central questions to be addressed in this paper. First, what were the patterns of Taiwan's higher educational expansion from 1950-1994? Second, what accounted for these patterns of higher educational expansion?

Three unresolved issues constituted the primary impetus of this paper. First, there have been many debates on the factors contributing to educational expansion, but the findings are not consistent. Second, most of the research on educational expansion focuses on elementary or secondary levels. It is questionable whether the factors explaining the expansion at the lower levels of education work equally well for the higher levels of education. Finally, many of the models on educational expansion are based on studies in decentralized countries. Such findings might not be appropriate for centralized decision-making countries like Taiwan. In sum, the ultimate goal of this paper is to enhance the understanding of educational policy-making in centralized countries like Taiwan and to inform the debates on educational expansion.

Background

Types of Higher Educational Institutions

Higher education in Taiwan includes general universities & colleges, institutes of technology, and junior colleges (Appendix 1).[1] These institutions differ in their sources of students, goals, and prestige. Universities and colleges enroll graduates from general senior high schools and usually offer four years of academic education. Based on the University Law, universities and colleges are devoted to academic studies and specialized education (Ministry of Education (MOE), 1993).

Institutes of technology and junior colleges constitute the vocational track of Taiwan's higher education. The first institute of technology was established in 1974 but the second one was not established until 1991. Institutes of technology generally recruit two types of students. The four-year programs enroll graduates from vocational senior high schools and the two-year programs enroll graduates from junior college (Lin, 1994, P.315). Institutes of technology offer more advanced technological and vocational education than junior colleges.

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[1] Other postsecondary educational institutions like graduate schools and open universities are excluded from the scope of analysis.

Junior colleges are the most common and complicated type of higher education. Two-year junior colleges enroll graduates from vocational senior high schools. Three-year junior colleges recruit graduates from general senior high schools. Five-year junior colleges enroll graduates from junior high schools (MOE, 1995a, XXV).[2] Junior college students are educated to become the semi-technicians, technicians, middle-level managerial and administrative manpower of the society (Council for International Economic Corporation and Development (CIECD), 1966).

The prestige of Taiwan's higher educational institutions can be predicted by three factors: the track they belong to, the source of their funding, and the size of the institution. General universities & colleges are more prestigious than junior colleges or institutes of technology because they recruit high-quality students and provide better future employment opportunities. Public higher educational institutions usually enjoy a better reputation than the private ones due to the better quality of education they offer and the lower tuition they charge. In general, higher educational institutions that are larger in size (universities) are deemed better than the smaller ones (colleges) because of the amount of resources they have. The hierarchical system in higher educational institutions constitutes not only the priority list of senior high school graduates when choosing schools, but also the main drive for upgrading[3] among these higher educational institutions.

Governance of Higher Educational Expansion

Both the opening of new higher educational institutions and the annual incremental changes in the number of college students (either because of the growth in the number of students recruited or the opening of new disciplines or departments) are under the rigorous control of MOE.

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[2]. As a result, students enrolled in the first three years (first-three-year students) of five-year junior colleges are generally not considered as college students.

[3]. For example, junior colleges want to be upgraded to colleges, and colleges want to be upgraded to universities.

Officially, MOE's policies that regulate expansion should parallel the University Law, the Junior College Laws, the Private School Laws, and the policies of the Executive Yuan.[4] Any changes in the student body or the number of disciplines or departments within existing higher educational institutions needs to be approved by MOE through an annual review process. MOE also decides if a new school can be opened. However, there is one major difference in the governance of public and private higher educational expansion. Because public schools use public revenues, growth in pubic schools cannot be decided by MOE alone. After MOE conducts the first-wave evaluation on the applications for expansion submitted by public higher educational institutions, it needs to send its preliminary decisions to a joint meeting of the Executive Yuan for further evaluation and final decision.

Participants in this joint meeting of the Executive Yuan include the vice presidents of the Council for Economic Planning & Development (CEPD), the National Science Council, the National Youth Commission, the Department of General Budget, Accounting and Statistics (DGBAS), the Department of Personnel, MOE, the Department of Treasury, and the Council for Research, Development and Evaluation (CRDE). The major criteria guiding the review process include the overall national plans of development, policies on human resource development, and the budget. Final decisions made in this joint meeting still need to be approved by the Committee on Budget Reappraisal of the Executive Yuan.

MOE often decides the quantitative changes in private higher education alone since these schools are not funded by public revenues. However, MOE's decisions are still influenced by the state's policies towards private schools and higher education. In general, the review process for public schools is more rigorous than that the process for private ones (CRDE, 1982, Pp. 42-48).

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[4]. The Executive Yuan is the highest administrative institution in Taiwan. Its responsibilities include policy making, supervision, and implementation. The actions of the Executive Yuan are regulated and overseen by the Legislative Yuan.

Historical Review

Appendix 2 illustrates the major historical events related to the quantitative changes in Taiwan's higher education. This section will only briefly introduce the key events in the past 45 years.

It should not be hard to imagine the status of the Republic of China (R.O.C.) in the early 1950s, the years right after its withdrawal from Mainland China to Taiwan due to its losses to the Chinese Communists. Concerns about national defense as well as political, economic, and social stability took precedence over educational development.

Four years after the withdrawal from Mainland China, the state revised the Private School Regulations in order to simplify the procedures for private investment in education. Thus growth in private higher education increased (MOE, 1957, Pp. 80-81).[5] MOE also approved the reactivation of several higher educational institutions that were "occupied" by the communists in Mainland China.

An economically- and vocationally-oriented educational policy was formed in the early 1960s (Huang, 1961). The government commissioned researchers from Stanford Research Institute to study educational policies. The result was a study called "The Problems of Educational Planning in Economic Development". It found that semi-technicians and technicians were in short supply while there were too many engineers, school teachers, and economic professionals. These researchers suggested that Taiwan enhanced the quantity and quality of its vocational education at the level of senior high schools and junior colleges.

In 1964, the government started to draw up its own manpower plan[6] to create a balanced workforce by forming a specialized team under CIECD. The first manpower plan was proposed in

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[5]. Before then, there was only one private higher educational institution in Taiwan.

[6]. It will be called manpower plan from now on, which refers to the plan that the government draw up to maintain a balanced workforce needed for economic development.

1966. Since then, manpower planning has become part of the national plans for economic development. These plans include detailed estimates of the gaps in the supply and demand of manpower by occupation and educational level, as well as an examination of policy implications. In 1985, the team on manpower planning was promoted to the level of department under CEPD (Chang, 1994, P. 283).

The inauguration of the new Minister of Education, Mr. Cheng-hsing Yen, in 1965 marked the beginning and a period of short but rapid growth of five-year junior colleges (Education and Culture, 1966, Pp. 58-59). Two years later, MOE called a halt to any new openings of five-year junior colleges due to the concerns about the quality of junior college education (Education and Culture, 1967). Five years later, the Executive Yuan banned the opening of any private schools. This restriction was in place for thirteen years (Official Gazette of the Legislative Yuan (OGLY), 1985b, P.52).

The ban on private schools was removed conditionally at first. In 1985, only certain types of private higher educational institutions were allowed to be established.[7] In 1991, MOE expanded the types of schools open to private input[8]; thus further increased the rate of higher educational expansion. The announcement of the reactivation of the National Chung Cheng University in southern Taiwan in 1986 ignited intensive competition among local political elite.[9] This competition led to claims for geographical balance in the distribution of higher educational institutions.[10] Two other trends also occurred during the recent expansion. One was the upgrading

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[7]. See Appendix 2, year 1985, for the types of higher education that were allowed to open.

[8]. See Appendix 2, year 1991.

[9]. For example, local political elite even threatened to committee suicide if National Chung Cheng University was not build in their city (OGLY, 1988).

[10]. For Example, see OGLY, 1987, P. 81.

of schools[11] from junior colleges to colleges or from colleges to universities, and the other was the expansion of the institutes of technology to build a complete system of vocational education.[12]

In 1993, MOE claimed to follow the world trends in higher education by raising the percentage of college and university students to 18% of the population by the year 2000 (Official Gazette of the Ministry of Education (OGME), 1993a, P.24). However, that policy has become much more conservative recently due to the crisis in vocational education, high unemployment rates among college and junior college graduates, and the state's economic constraints (Digest of Educational Information, 1993, Pp.4-10). In the near future, the growth in public higher educational institutions is expected to be frozen. Private higher educational expansion will continue, but at a much slower rate (Young, 1993). The goal is to maintain a yearly increase of 3% in higher education enrollments (OGLY, 1994, P. 397).

Research Methods and Organization of this Paper

To answer the research questions, both document and literature reviews were conducted. Appendix 3 contains detailed information about the key official documents examined. I will first describe the patterns of higher educational expansion in terms of the number of schools, students enrolled, and educational expenditures. Research shows that the growth in these three areas do not necessarily parallel each other (Fuller, 1991).

To provide explanations for the patterns of growth in Taiwan's higher education, I will first summarize the state's rational for regulating the growth in higher education and followed by an overview of the studies on educational expansion from research literature. Based on these findings, I will reappraise the official explanations for regulating higher educational growth and the appropriateness of the models on educational expansion in accounting for the patterns of growth in

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[11]. For example, see OGME, 1991c.

[12]. For example, see Digest of Educational Information, 1989.

Taiwan's higher education. Summaries of the findings and the future research agenda will be covered in the concluding part.

Patterns of Higher Educational Expansion in Taiwan

I. Patterns of Expansion in the Number of Institutions

The number of Taiwan's higher educational institutions increased from 7 in 1950 to 130 in 1994 (MOE, 1995a). That growth occurred primarily during two periods of rapid development. The first one was seen between 1953 to 1972 and the second one started in 1985 and continues presently. A thirteen-year stationary period fell within these two periods (Appendix 4).[13] On average, 4.5 schools were built yearly during the first period. About 80% of the higher educational institutions built during this time were junior colleges. In the second period, 2.5 schools were built yearly. The number of junior colleges declined[14] and colleges were built at three times the rate of universities (See Table I).

Table I: Changes in the Number of Higher Educational Institutions by School Type (Values calculated based on MOE, 1995a)

Year	Junior College		Institute of Technology		College		University		All	
	C[a]	A[b]	C	A	C	A	C	A	C	A
1950-53	2	0.50	0	0	0	0	0	0	2	0.50
1953-72	71	3.55	0	0	11	0.55	8	0.40	90	4.50
1972-85	1	0.07	1	0.07	-3	-0.21	7	0.50	6	0.43
1985-94	-5	-0.50	4	0.40	19	1.90	7	0.70	25	2.50

[a]. Change in the number of higher educational institutions.
[b] Average yearly change in the number of higher educational institutions.

[13] The cut-off points of these periods differ slightly by scholars (Chen, 1993, Sun, 1993), but the differences are minor. The cut-off points in this paper are chosen based on major changes in policies that affected higher educational expansion. Significant changes might be seen a couple years later due to the time lag.

[14] The number of junior colleges declined not because they were closed, but because they were upgraded to colleges. The negative values for colleges in Appendix 5 and 7 were observed for the same reason. They were upgraded to universities.

Three observations can be concluded when analyzing the growth of higher education by school type. First, four-fifths of current junior colleges now existing were established during 1953-1972. The most dramatic growth occurred between 1964 and 1966, in which 27 junior colleges were built. Second, the growth of institutes of technology was extremely slow. The first institute of technology opened in 1974 and the second one was not established until 1991. As a result, vocational students had far less opportunity to get bachelor degrees[15] when compared with students in the general track. Third, growth in the number of universities has been steadier than that of other types of higher educational institutions.

When examining the longitudinal trend of expansion by source of funding (See Table II), it was found that the increase in the number of higher educational institutions was mainly due to the increase in private institutions. In comparison, public higher educational institutions continued to grow at a steadier rate. Because the growth of public institutions has been better planned, the quality of education is superior. Another interesting observation is that most universities are funded by public resources while the majority of junior colleges are supported by private investment. The fact that the most prestigious schools (universities) were often built by the state while the least-preferred ones (junior colleges) were mainly funded by private resources is interesting and will be discussed later.

Table II: Changes in the Number of Higher Educational Institutions by Source of Funding
(Values calculate based on MOE, 1995a)

Year	Junior College		Technical College		College		University		All	
	Pu[a]	Pr[b]	Pu	Pr	Pu	Pr	Pu	Pr	Pu	Pr
1950-53	2	0	0	0	0	0	0	0	2	0
1953-72	16	55	0	0	2	9	5	3	23	67
1972-85	1	0	1	0	0	-3[c]	3	4	5	1

[15]. Junior colleges do not grant bachelor degrees to graduates. The only chance for vocational students to get bachelor degrees is to go to the institutes of technology.

1985-94	-8[c]	3	3	1	8	11	6	1	9	16

[a] Public institutions
[b] Private institutions
[c] The negative value indicates that the number of schools in that period decreased. However, these schools were not closed, but were upgraded.

When analyzing the growth of higher education by curriculum track, it was found that the proportion of vocational higher educational institutions increased rapidly between the late 1960s and early 1970s, reached its peak in 1974, then dropped afterwards (See Table III). In 1950, 43% of the higher educational institutions were vocational. In 1974, three-fourths of them were and then it dropped to 60% in 1994. Despite the fact that the majority of students are involved in vocational education, its status has been lower since it was mainly provided by junior colleges, rather than institutes of technology. The scarcity of general higher education explains part of its superior status in Taiwan's higher education.

Table III: Ratio of Vocational vs. General Higher Education

	1950	1954	1959	1964	1969	1974	1979	1984	1989	1994
Ratio	0.75	1	0.57	0.95	3.14	3.35	3.04	2.89	1.90	1.40

II. Patterns of Expansion in the Number of Students Enrolled

The student-population ratio grew quickly as well. In 1956,[16] there were only two college students[17] per thousand people. Thirty years later, that ratio was more than ten times higher (See Table IV and Appendix 5).[18] The ratio of junior college students per thousand people increased at a much faster rate (27.8 times higher) than that of colleges and universities (7.8 times higher) between 1956 and 1994.

[16] Data before 1958 are not available. Data for 1956 and 1957 are estimated based on the data from the Department of Statistics, MOE.
[17] The term 'college students' refers to students in junior colleges, institutes of technology, colleges and universities unless otherwise specified.
[18] Appendix 5 excluded the first-three-year students in five-year junior colleges from analysis,

Table IV: Number of College Students Per Thousand People (First-three-year students in five-year junior colleges are excluded. Values calculated based on MOE, 1995a and unpublished data from Department of Statistics, MOE)[19]

	1956	1961	1966	1971	1976	1981	1986	1991	1994
Junior Colleges	0.45	0.61	1.61	4.15	5.51	6.08	7.56	10.57	12.51
Colleges & Universities	1.83	2.63	4.99	6.66	8.50	8.70	9.47	12.30	14.26
Total	2.28	3.24	6.60	10.81	14.01	14.78	17.03	22.87	26.77

Similar transition points in Appendix 4 and 5 indicate that changes in the number of college students are partially the result of changes in the number of higher educational institutions. However, the growth in the number of higher educational institutions was more dramatic then that of the number of students enrolled. During the stationary period, the size of student body continued to grow through the annual reviews of MOE on the expansion of existing schools.

A greater percentage of college students received their higher education in private institutions (Appendix 6).[20] Growth in the number of students enrolled in public higher educational institutions increased at a steadier rate. In terms of the curriculum track, students in the vocational track[21] increased at about the same rate as those in the general one (Appendix 7).

III. Patterns of Expansion in Higher Educational Expenditures

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but the span of analysis only covers the past 39 years.

[19]. Note that in this table, students in institutes of technology were incorporated into the category of colleges and universities since they all received bachelor degrees.

[20]. However, the gap between the number of public and private college students is expected to be narrower than is seen in Appendix 13 due to the fact that the first-three-year students in five-year junior colleges are not excluded. Since most of the five-year junior colleges are private, excluding the first-three-year students will bring the number of private college students down more.

[21]. Including both junior colleges and institutes of technology.

Appendices 8, 4, and 5 show that spending in higher education did not parallel the growth in the number of higher educational institutions and the number of students enrolled. The two transitional points (1954 and 1972) seen in the growth of institutions and students are not seen in the growth of higher educational expenditure. Higher educational expenditure did not increase rapidly until 1980. The greatest increase was seen after 1989.[22] However, that rapid growth was a result of the growth in total educational expenditure,[23] rather than an increasing emphasis on higher education, since the proportion of higher educational expenditures in total educational expenditures after 1980s only increased slightly.

Additionally, funding for higher education has not been equally distributed, but rather differs according to the type of school and the source of funding. First, the gap in educational expenditures between junior colleges and other types of higher educational institutions far exceeded the gap in the number of students between the two, indicating that the amount of monetary investment junior college students received has been lower[24] than students in other types of higher educational institutions (Compare Appendices 5 and 9). Second, the amount of money spent on students in private institutions has been lower than those enrolled in public ones most of the time (Compare Appendices 6 and 10).

In summary, the growth of Taiwan's higher education occurred mainly during two periods of rapid growth. The patterns of growth in the number of institutions, students enrolled, and educational expenditures did not parallel each other. Similar transitional points were found in the growth of the number of institutions and students enrolled, but not in the growth of higher educational expenditures. Changes in the number of institutions were more dramatic than those in

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[22]. In Appendices 15-16, categorical data are not available until 1975.

[23]. Under the pressure of the Legislative Yuan, the proportion of educational expenditure at the state level finally reached .15 in 1990, as required by the Constitution. This partially explains the increase in total educational expenditure.

[24]. If we took the part of the educational expenditure for the first-three-year students of five-year junior colleges out, the amount of money spent on college students in junior colleges would be even

the number of students enrolled. Higher educational expenditure has experienced a rapid growth since 1980. However, evidence suggests that it was a result of the growth in total educational expenditures, rather than an increasing emphasis on higher education.

The patterns of growth in Taiwan's higher education explain partially the formation of its hierarchical system. The status of junior colleges has been inferior to other types of institutions partially for several reasons related to their patterns of growth. First, the monetary input junior college students received has been lower than those in other types of institutions. Second, the growth in junior colleges has been quite unsteady over time, indicating that the growth was not well-planned. Third, junior college graduates have little opportunity to get bachelor degrees due to limited access to institutes of technology. All of these have a negative impact on its status.

In contrast, universities continued to grow at a steady rate over time, indicating that their development was better-planned. Furthermore, students in universities, especially those in the public ones, receive more monetary investment. This is especially true for students in public universities since they pay less tuition but enjoy better quality of education because of the tremendous monetary input from the government. These factors partially explain the superior status of universities.

The State's Rationale for Regulating Higher Educational Expansion

The brief review of the history and the governance of higher education suggests that the central government plays an active role in regulating higher educational expansion. Review of the official documents suggests that government bureaucrats regulated the growth of higher education because of concerns about the economy, the quality of education, the social demands for higher education, and the equal regional distribution of educational resources.

I. Economic Concerns

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lower.

Findings from the document review indicate that economic concerns were the primary reason government bureaucrats regulated the growth of higher education. There were three dimensions to the economic concerns: education for economic development, the unemployment rate, and the state's economic constraints in providing higher education.

A. Education for Economic Development

"Education for economic development" has been the main theme of educational planning in Taiwan since the early 1960s. It is widely believed that through careful educational planning, the society will have the manpower needed for its economic development.[25] Manpower plans and economic plans have gone hand in hand since 1964 (Appendix 2). Projections of the manpower needed by types of occupations and educational backgrounds were mapped out in every manpower plan based on the national economic plan for the same time period. Estimation of manpower demands was then compared to that of the manpower supply and formed the basis of policy suggestions for adjusting the quantity of all levels of education. The ultimate goal of the manpower plans was to make sure that economic development would not be hindered due to the lack of appropriate manpower. Because applied sciences and technologies have been deemed more important for economic growth, manpower plans consistently suggested increasing the growth in these fields.[26] Suggestions regarding growth in the humanities and social sciences have been more conservative (CEPD, 1986). The contribution of manpower planning to economic development is yet to be determined. However, it has been established that manpower plans did have a large influence on the proportional distribution of students in different curriculum tracks.[27]

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[25]. For a few of the many examples, see Lin, 1976, 1984, OGLY, 1962, Pp. 36-37

[26]. One relevant goal in a recent manpower plan was to increase the proportion of college students in sciences and technologies to . 5.

[27]. For example, the ratio of vocational versus general senior high schools was changed from 4: 6 in 1967 to 7: 3 in 1981 (Young, 1994, P.50). Also, the enrollments of college students in the humanities and social science were carefully controlled despite the fact that many students intended to specialize in these disciplines. For example, in 1991, the rejection rate of departments of humanities and social sciences in the joint college entrance examination was 73% while that of

The theme of education for economic development guided not only every manpower plan,[28] but also the criteria MOE used in reviewing the applications for expansion submitted by schools (CRDE, 1982, Pp. 42-48; OGME, 1984, P.3). During the stationary period, manpower plans suggested that the growth in the number of college and university students shouldn't exceed 5%. This period was the time when manpower plans had the greatest influence on higher educational growth (Sun, 1993).

B. The Unemployment Rate

Controlling the unemployment rates is another economic motivation for regulating the growth of higher education. This is evident in every manpower plan and also in the criteria MOE used to review the applications for expansion. Disciplines whose graduates had high unemployment rates had little chance to expand its student body (OGME, 1984, P.3).

Whenever the unemployment rate rose, the calls for careful manpower planning increased, too.[29] High unemployment rates among educated people indicated a waste in educational investment and a greater chance of political and social disturbances.
Unemployment rates among postsecondary graduates, especially those in the general track, usually drew immediate attention from the public. Controlling the unemployment rates of this group thus was often used as a reason to regulate the expansion of higher education (OGLY, 1965b, Pp.56-57, P. 66; OGLY, 1985c, P.113).

Manpower planning has been the most common solution to high unemployment rates in Taiwan. Because the manpower plans monitored the unemployment rates very closely and offered suggestions regarding the supply of manpower periodically, often it was considered the individual's

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departments of sciences was 29% (OGLY, 1991b, P. 490).

[28]. Before the state drew up its manpower plan, suggestions from the Stanford Research Institute were used to guide the expansion in the mid 1950s.

[29]. For a few of the many examples, see OGLY, 1964a, P.94; Wang, 1998, Pp.9-14; Wu, Ta-yu, 1984; OGLY, 1993, P.433.

fault, rather than the state's, for the rising unemployment rates because individuals did not follow the plans the state had mapped out for them (Wang, 1978, Pp. 9-14).

Schooling was also a way to draw the unemployed youth away from the street. For example, in early 1960, three-fourths of the youth aged 13-18 were not at school. Many of them did not have the skills needed to get a job. Providing these youth with vocational education was proposed as the solution to minimizing the social problems caused by high youth unemployment rates (Huang, 1961, Pp. 1-7). The unemployment rate was also believed to be negatively related to education levels.[30] The policy implication derived from that belief was to provide more educational opportunities. During the first period of rapid growth, the state expanded schools to help get unemployed youth off streets, and also to equip them with the skills they need to be employed in the future.

Nevertheless, using schooling as a way to control unemployment rates could be very costly in the future. Reducing the unemployment rates temporarily through schooling could lead to increasing unemployment rates at higher levels of education. It was mainly out of this concern that Taiwan's government has been very conservative in boosting the growth of higher education.

C. The State's Economic Constraints

Although the state bureaucrats had a strong belief in the economic value of educational investment, the amount of resources the state could allocate to education has been limited. This is especially true in the early period when the national economy was underdeveloped and the cost of defense constituted a large part of government spending (OGLY, 1965a, P.42). It was not until 1990 that the federal government was able to meet the requirement of the Constitution to spend at least 15% of the its budget on education (MOE, 1993b, P. 51). Since higher education, especially public institutions, is mainly supported by the state, the shortage of educational funding affected

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[30]. Minister Yen represented one of those who held this belief (Education and Culture, 1962, Pp. 44-45)

the state's capability to build schools to meet the needs of economic development or social demands.[31] High fertility rates and the rapid growth of elementary and junior higher students in the early period also increased the state's financial burden even though the main providers of these two levels of education should have been the local and provincial governments.[32] The fact that the federal government had to subsidize these two levels of education further affected the growth of higher education.

Faced with the need to promote economic development through educational investment and yet constrained by fiscal shortage, MOE had to rely on private resources to accomplish its goals (Huang, 1961, Pp. 1-7). However, the state regulated private input. It was mostly up to the state to decide where the private resources should be allocated and when. Criteria about the types of the private institutions created changed as the state's needs changed. For example, during the first period of rapid growth, the state clearly stated that vocational education should be primarily supported by private funding (Huang, 1963, Pp.1-5). During the recent period of expansion, private input was only welcome in certain disciplines and in certain types of institutions.[33] Private investment in higher education was thus used as if it was public money because the state had great control over how it should be spent. When the state was under economic constraints, private investment became an alternative for the state to fulfill its educational goals.

Even though private input contributed greatly to higher educational expansion, prestigious or elite private higher educational institutions like those in the United States never existed in

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[31] In 1962, it was estimated that the government would need 170 million dollars in the coming four years to prepare the manpower it needed for economic development. However, the state had problems even finding the 9 million dollars it needed for that year alone (Official Gazette of the Legislative Yuan, 1962, Pp. 53-54).

[32]. By 1961, spending in education at the provincial level had exceeded 25% of its budget. At the county level, it had exceeded 35%. The high proportion of spending in education hindered other functions of the local governments (Huang, 1961, Pp. 1-7).

[33]. Please see Appendix 2, year 1985, for more information.

Taiwan. This is partially because most private input had been designated to vocational education, the type of education that was least preferred in a Chinese society,.

II. Quality Concern

The concern about the quality of higher education was the main reason the state rejected any applications for opening higher educational institutions between 1972 and 1985. It was also the common response to the calls for widening the access to colleges and universities. The hidden assumption is that restricting the quantitative growth of higher education would promote its qualitative growth.

The rapid expansion of junior colleges in the 1960s was followed by poor quality of education and problematic school management.[34] Due to the heavy criticism from the society, MOE froze the creation of five-year junior colleges in 1967. In 1972, the Executive Yuan further banned any new opening of private educational institutions and decided that no other private higher educational institutions should be opened until the quality of the existing ones had been improved. To promote the quality of private higher education, one of the criteria in the annual review of the applications for expansion was the evaluation of the overall school performance. Applications of expansion submitted by schools that did well had a better chance of being approved (OGME, 1975, Pp. 7-12).

The state bureaucrats seemed to care more about the quality of colleges and universities. Since colleges & universities were devoted to academic and creative studies, it was their quality, rather than the quantity, that mattered. Consequently, the quantity of colleges and universities was

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[34]. The Committee on Education of the Legislative Yuan even conducted a special investigation on five-year junior colleges in response to the heavy criticism from citizens. The report concluded that most private five-year junior colleges had problems recruiting qualified teachers. Many of the schools couldn't offer appropriate curriculum, enough teaching equipment, and satisfactory school facilities. Some schools were either in debt or had problematic accounting. Although the first-three-year students received the kind of education that was equivalent to senior high school students, they were expected to pay the tuition that was the same as college students. As a result, many students chose not to study at five-year junior colleges (OGLY, 1969, Pp.2-12).

strictly regulated in order to control their quality (Huang, 1963; Education and Culture, 1967, P. 60). The quality of higher vocational education was less of a concern since their aim was to provide practical education (OGLY, 1967, P 78).

III. Social Demands for Higher Education

Social demands for higher education has been high in Taiwan partially due to the influence of Confucianism, and partially due to the economic advantages associated with college degrees. Many senior high school graduates who failed the joint college entrance examinations would do nothing but study and then take the exam again the next year. Some even took the exam more than twice simply because they wanted to go to college. For some of the students who passed the exam, going to college alone was not enough. They wanted to go to prestigious ones.[35] As a result, some higher educational institutions had problems recruiting enough students because the students who passed the exam and were admitted chose not to enroll in. Despite the fact that some spaces were left opened every year, the competition in the joint entrance examination increased year after year due to the growth in the students who took the exam more than once. For example, in 1978, the number of students who took the exam more than once was double the number of the senior high school graduates that year (Wang, 1978).

Legislators have been pressing the government to build more public colleges and universities or to remove the restrictions on private ones in order to ease the competition in the joint college entrance examinations.[36] Most of the time the government responded with the concerns about economic development, the unemployment rates, or the quality of education (OGLY, 1985c, P. 54). Meeting the social demands for higher education only became a reason for expansion when it was consistent with other concerns, like the need for economic development.

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[35]. Normally these were the hot disciplines in public universities.
[36]. For some of the many examples, see OGLY, 1971, Pp. 14-15; 1982, P.68; 1985b, Pp.38.

The expansion of five-year junior colleges in the 1960s is a good example of this. On the one hand, the social demand for higher education was high.[37] On the other hand, research indicated that the demand for vocational education at the level of junior colleges was increasing.[38] The state decided to solve these two problems at the same time by creating a new type of junior college, the five-year junior college. The last two years of five-year junior colleges were considered to be equivalent to the first two years in colleges and universities. This new type of school reduced the intensive competition in entrance exams in the following ways. First, it provided one more option for junior high school graduates and reduced the competition in the entrance exams of the general senior high schools. Second, for those who wanted to become college students, five-year junior colleges were a desirable alternative because junior high school graduates only needed to pass one entrance exam to become college students, thus reducing the competition at the joint college entrance exams (OGLY, 1964, Pp. 21-22). Most importantly, these five-year junior colleges produced the types of manpower needed by economic development. Establishing five-year junior colleges seemed to be a feasible policy to solve the multiple problems of the government.

The state's policies regarding higher education seem to be at a turning point currently. Social demands for higher education have become stronger as living standards have improved. For many people, getting a college education was not only an investment, but also an act of consumption as well. People wanted the freedom to get as much as education as they desired (Sun, 1993). This increasing demand for higher education put great pressure on the state recently.

IV. Equal Distribution of Educational Resources

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[37]. For example, the average continuation rate was 26.52% from senior high school to colleges and universities and 68% from junior high schools to senior high schools (OGLY, 1964, P.40).

[38]. The report, "Problems in Educational Planning in Taiwan's Economic Development," by the Stanford Research Institute indicated that there would be a shortage of semi-technicians and technicians in 1964 (Huang, 1963).

The location of higher educational institutions, especially the public ones, has great political implications. Having a higher educational institution in the community enhances the cultural, economic, demographic, and social development in that area.

Unfortunately, the distribution of higher educational institutions has been quite unbalanced for a long time. Higher educational institutions tend to cluster more in the north than the south, in the west than the east, and in the few big cities rather than small cities and rural areas (OGLY, 1985b. P. 32, P.35). One study pointed out that the geographical distribution of educational resources at the level of higher education was the most unequal one since very few cities had most of the higher educational institutions, while the majority of cities had none (Ma, 1991).

The call for geographical balance in the distribution of higher educational resources started early. However, it was not until the late 1980s that the demand became stronger and finally got the attention of the government[39]. The announcement of the reactivation of the National Chung Cheng University marked the beginning of fierce competition among local elite for having that university established in their hometown. Competitors in central and southern Taiwan not only offered free land for school use, but also mobilized all the political resources to influence MOE's decision.[40] When the location of the school was decided, that competition transformed into a stronger demand for geographical balance in the distribution of higher education. Since then, the concern about geographical balance has been included in the state's manpower plans for higher education[41] and has become an important criterion when MOE reviews applications for expansion (CEPD, 1993, Pp.53-53).

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[39]. For a few of the many examples, see OGLY, 1981b, P.14; 1985c, P. 32. P. 35.

[40]. For a few of the many examples, see OGLY, 1986a, P. 19; 1986b, Pp. 52-53; 1987, P. 48.

[41]. For examples, see Digest of Educational Information, 1989, Pp. 4-5; OGME, 1991b, P. 30. The six-year plan for national development announced in 1991 highlighted geographical balance in the distribution of higher educational institutions as one of the leading goals between 1991 to 1996. It even specified the amount of higher educational institutions to be built in each area (CEPD, 1991, P. 149).

In sum, Taiwan's government regulated the growth of higher education due to concerns about economic growth, the quality of education, social demands, and the equal distribution of higher educational institutions. Economic concern has been very prominent in the past 45 years. The state managed to boost economic growth through education and to keep unemployment rates at acceptable levels. Private resources were used as public money when the economic capacity of the state could not afford to expand education to meet the economic goals. Concern about the quality of education was often used as the reason to reject any calls for increasing access to higher education, especially to colleges and universities. It was also used to freeze the growth in the number of private higher educational institutions between 1972 to 1985. Relatively speaking, the state has been quite indifferent to the social demand for higher education unless it coincided with economic development. Recently the state has become more attentive to the social demands and the demands for equal regional distribution of higher educational resources when planning the growth of higher education.

Models of Educational Expansion

Many theoretical and empirical studies have provided various explanations on educational expansion. These studies can be divided into two main camps, the society-centered approach and the state-centered approach.

Demand-Driven Educational Expansion--The Society-Centered Approach

The society-centered approach focuses more on the demand side of educational expansion. Educational expansion is seen as a result of the changes in social forces, like technological innovation, job structures, or social conflicts. Two major models, human capital theory and conflict theory, provide different accounts about how various social forces affect educational expansion.

A. Human Capital Theory

Human capital theory understands education as an investment that leads to economic returns at both individual and aggregate levels (Harbison, 1964; Rubinson & Meyers, 1964; Schultz, 1961). These arguments focus on the phenomenona of modernization, industrialization, and urbanization. Changes in the occupational structure and required skill levels due to industrialization and modernization requires specialized agencies like schools to prepare the labor force needed in the workplace. Upgrading of skill and knowledge levels in newly created jobs also pushes education to expand. Education is not about skill training only. Schools also teach the norms and behaviors that would make individuals members of the modern world.

Human capital model also claims that school enrollments can be predicted by the changes in occupational structures, unemployment rates, technological innovations, urbanization, the size of the immigrant population, or growth in the industrial sectors.[42] The process of industrialization and urbanization draws more youth to schools due to upgrading in skill levels in the labor market. Increasing demands for advanced manpower resulting from technological innovation push students to stay in school longer while the growth in the jobs at lower levels, like blue-collar workers and craftsmen, tends to pull youth out of schools earlier. The growing size of the immigrant population keeps adolescents in school longer since the former take away many jobs at the entry level. The impact of unemployment rates on school enrollments is ambiguous. On the one hand, high unemployment rates indicate poor economic returns on educational investment. A rational decision would be to leave school earlier to reduce the cost of investment. On the other hand, school is also a place to warehouse the idle youth during the periods of depression. This reduces social and political disturbances, and prepares them for future job opportunities (Grubb & Lazerson, 1982).

At the national level, human capital theory suggests that the input in education has an independent effect on national economic output. Successful coupling between education and the

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[42]. For some of the studies utilizing these variables, see Rubinson & Ralph, 1984; Fuller, 1983; Walters, 1984, 1986; Walters & O'Connell, 1988.

changing needs of the economy is critical for economic growth (Fuller, et. al. 1986). The remaining task, based on this assumption, is to specify the conditions under which education would boost economic growth.

The type of society envisioned by human capital theory is a meritocracy, in which schools are central agents. Because education can lead to social mobility, it is a valuable asset that individuals want to obtain. This is one reason for the increasing demand for education (Meyer, 1992). Of course, the pursuit of education is conditioned by individuals' economic constraints, their beliefs, and the expected economic returns of education. If the price (both the tuition and the opportunity cost) is too high, individuals and their families might decide that education is not for them regardless of the economic values of education (Fuller, 1991; McMahon, 1992). The spread of the values about education also affects the demands for education. Thus, indicators like family income, living standards of the society, parental education levels, degrees of urbanization, and communication technologies that facilitate the diffusion of the value of education, are believed to be related to higher demands for education, and consequently growing school enrollments.

In sum, human capital theory proposes that growth in education is a rational decision for individuals and nations in the face of industrialization and modernization. Technological innovation, industrialization, upgrading skill levels, and changes in the occupational structure lead to the need for systematic learning to prepare the needed workforce. The levels of the demand for education are also determined by the connection between education and better future prospects, the capability of individuals to pursue education, and the spread of beliefs about the economic values of education.

B. Conflict Theory

Conflict theory argues that growth in school enrollment is a result of social conflicts. There are four versions of this theory: class reproduction, cultural imposition, status competition, and the dependency theory. To conflict theorists, deskilling, rather than upgrading in skill levels, is

the universal phenomenon in the process of industrialization. Schooling grows not to teach skills that promote the opportunities of social mobility, but to cultivate norms and behaviors that facilitate the growth of a capitalist economy and the domination of the elite classes, such as obedience or compliance with rules.

Education for Class Reproduction

Class reproduction theorists propose that what really drives school expansion is not technological changes, but the logic of capitalism (Bowles & Gintis, 1976). Schools are used to prepare the labor force needed by the capitalists. The aim of educational reforms is to align education with the economy in order to enhance the economic returns of economic elite, rather than the general population. A dual system that corresponds to the segmented labor markets is maintained in the educational system. Despite the fact that schooling expands over time, class boundaries remain.

Education for Cultural Imposition

The theory of cultural imposition argues that schooling expands to pass on the culture (religions, ideologies, norms, values) of the dominant groups to the next generations and other heterogeneous groups like immigrants in order to maintain the homogeneity of the society and preserve privilege (Katz, 1968; Lazerson, 1971; Nasaw, 1979; Schultz, 1973). Empirical findings indicate that the enrollment rates were already high before the era of industrialization. Furthermore, higher enrollment rates were found in rural, rather than urban areas. This evidence contradicts the basic assumption of human capital theory. Imposing the culture of the dominant groups through schooling is proposed as what really accounts for the growth in school enrollments.

Education for Status Competition

Another line of thought views educational expansion as a result of status competition among different groups (Baker, 1992). Here education is a tool to distinguish one's status from others. Because education is related to social success, though not necessarily in any meaningful

sense,[43] people need to get more education than their competitors in order to secure their status. The spiral competition among different groups leads to educational expansion, educational inflation, as well as institutional isomorphism. However, the class structure is still sustained because the dominant group is able to remain one step ahead (Collins, 1979).

Education for Dependent Development

Lastly, the global version of conflict theory understand educational expansion as a means of global exploitation that maintains the hierarchical system of nations in the world economy. This line of argument is related to dependency and world-system theories (Benavot, 1992). In the peripheral countries, education models are borrowed from the core, usually the Western nations, to reproduce the class structure in the peripheral nations and to legitimatize the superior status of their local elite. The westernized school system convinces the subordinated classes of the peripheral countries that they deserved to be inferior in the educational and social systems. Consequently, schooling enhances the profitability of the capitalists in peripheral nations and strengthens the ties of dependency and exploitation between the core and the peripheral countries.

In general, both human capital and conflict theories see educational expansion as a demand-driven process. It is the demand for education out of the concerns for economic development, status, or cultural supremacy that causes the rapid expansion of schooling. The major differences between the two is their appraisal of the economic effects of schools, their views on the receivers of these economic effects, and the explanations derived from their assumptions. Social forces like technological changes or group conflicts are the focus of their analysis.

The problem with the society-centered approach is that it ignores the supply side of educational expansion. It assumes that school enrollments would always respond to the demand derived from changes in social forces. However, that assumption can be very wrong when the

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[43]. This line of research suggests that credentials, rather than skills and knowledge learned from school, links education to the system of social stratification.

demand for education can be reinforced, redefined, suppressed, or ignored by the suppliers of education, especially the state.

Supply-Driven Educational Expansion--The State-Centered Approach

Recent research found that state policy alone has a great impact on educational expansion, and consequently, the structure of social stratification (Post, 1994). The fact that some governments are able to reinforce, mediate, regulate or even reverse the impacts of social forces on educational expansion has drawn greater attention.[44] It is suggested that the society-centered approach is more valuable in a society where the enrollment rates respond effectively to the demand with little intervention from the state, but its explanatory power is limited in places where the supply of education is not determined by the demand, but the state's policies. This awareness parallels the suggestions made by Grindle and Thomas (1991), who propose that more attention should be paid to the state-centered approach when studying the policy changes in developing or centralized countries.

In the state-centered approach, the state and government bureaucrats are the focus of investigation. This is different from the society-centered approach, which views the activities of the state and government bureaucrats as the outcome of various social forces. Studies that turn to the supply side of educational expansion focus on the interests and the strength of the state as well as its interaction with social forces in boosting educational growth. Findings from this area of research are summarized as follows.

A. The Interests of the State in Boosting Educational Growth

Some studies argue that the state could expand schools for the purpose of nation-building or increasing its institutional legitimacy and authority regardless of the social circumstances in the society. Evidence from cross-national comparisons suggests that educational expansion is more than a function of social factors like urbanization, industrialization, or class conflicts in the nation-

states. For example, the expansion of mass education was found to be a world-wide universal movement that could not be explained by the social characteristics of each nation alone (Meyer, et.al., 1992; Ramirez & Boli, 1987; Ramirez & Ventresca, 1992).

Schools can be used as socializing agencies to educate the citizens of the nations. Some studies suggest that the state boost educational growth for the purpose of cultivating citizenship and consolidating the sense of collectivity in the nation (Boli, 1992). The parallel between the movements of nation-building and educational expansion after WWII further supports this argument.

Other studies argue that schooling expands as a result of the state's effort to promote the status of the nation in the world system as a way to enhance its legitimacy and authority. By signaling the nation's membership in the modern world system through higher enrollment rates and a westernized school system, the state sends a message to its citizens regarding its legitimacy and superiority as a political entity (Fiala & Lanford, 1987; Fuller, 1991). As indicated by Ramirez and Boli, "the state educational system became a sensible and even imperative organizational undertaking because it was broadly legitimatized by the dominant model of a national society" (Ramirez & Boli, 1987).

B. The Strength of the State and Its Interaction with Social Forces

Studies that focus on the strength of the state and its interaction with social forces provide neater analyses on the variations in the supply side of educational expansion. It is argued that the state's capability in controlling educational expansion is situational (Fuller, 1991; Jeong & Armer, 1994; Fuller & Rubinson, 1992). That capability is determined by its strength and its interaction with social forces.

These studies discuss the ways that the state can affect school enrollments. For example, it can repress educational expansion through establishing multiple educational systems and

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[44]. For examples, see Hage & Garnier, 1992; Jeong and Armer, 1994; Fuller & Rubinson, 1992.

restricting access to them, creating new programs or new schools very slowly and limiting access to them, and emphasizing the quality through difficult examinations that many would fail (Garnier, et al. 1989). The state can also boost educational growth by building more schools, passing compulsory attendance laws, or subsidizing school tuition to stimulate the demand for education (Post, 1994).

However, the state's ability to boost school enrollments is conditioned by the institutional characteristics of the state, like its political structure, finance, span of control, or information system. It is also conditioned by the environment, for instance, the strength and interests of classes, local elite, and other interest groups. For example, Hage and Garnier (1992) found that a strong state,[45] like France, could maintain a class-based educational structure that corresponded to the class structure and resist the pressure for more access to education. Because the French state was able to promote the expansion of mass education, but restrict the access to elite schools, the enrollments in non-elite education responded more to the state's actions while that of the elite schools reacted more to the perceived economic returns.

A more delicate model was provided by Jeong & Armer (Jeong & Armer, 1994). They created a two-by-two table to illustrate the interaction between the state and social classes and discussed the impact on educational expansion. For instance, when both the state and the class system are strong, as was the case in France, the state can structure the educational system in a way to maintain the class boundaries. When the state is strong, but the class system is weak, as was the case in South Korea, the state can create an education system that corresponds less to the class structure, but responds more to the political and economic concerns of the state.

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[45]. The strength of the state, based on Hage and Garnier, is determined by
1. the relative power and legitimacy of state bureaucrats,
2. the creation of highly differentiated educational system,
3. the closing of access to some parts of the educational system,
4. emphasis on the quality of education,
5. enforcement of attendance laws, and

Analyses on the strength of the state, its interaction with the social environment, and the resulting policy actions provide a combined picture of the supply and demand of educational expansion. However, as indicated by Fuller and Rubinson (1992), the relative strength of the state and the underlying political and economic conditions in determining school enrollments has yet to be addressed. The answer to this question depends on the period of time and the place under investigation.

Revisiting Taiwan's Higher Educational Expansion

Social Forces and Taiwan's Higher Educational Expansion

A. Education for Economic Development?

The two periods of dramatic growth in the number of higher educational institutions seemed to correspond to the changes in the economy. In the early stage of industrialization, labor-intensive production was the major feature of economic activity and the demand for advanced manpower was low. Accordingly, junior colleges were expanded rapidly while colleges and universities were built very slowly based on the projected needs in the labor market. In the 1980s, the economy has become technologically-intensive, and therefore the growth of colleges and universities rose rapidly.

However, other evidence casts doubt on the validity of this claim. At the aggregate level, if economic concerns were what drove the educational expansion in Taiwan, one would expect that the economic effect of Taiwan's higher education to be great since education has been carefully planned to coincide with economic development. Nevertheless, studies found that the economic effects of higher education at the aggregate level is very weak, sometimes even negative (Rubinson & Fuller, 1992; McMahon, 1992). In a study on the economic effect of education in Taiwan, Liu and Armer discovered that Taiwan's college education had no significant effect on economic

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6. the state's ability to handle educational crises.

growth (Liu & Armer, 1993). They concluded that the operation of the human capital process was missing in the growth of Taiwan's higher education.

The two transition periods in Taiwan's higher educational expansion, even though they seem to correspond to the two transition periods in the economy, can not be explained by economic concerns alone. First, it would be very difficult for human capital theory to explain the establishment of 27 junior colleges within a two-year period and the sudden halt afterwards unless such great changes in labor demand were also observed. Second, the expansion of higher education in the late 1980s was seen as a response to the demand for advanced technical manpower in the labor market. If that were true, why were universities excluded from the list of expansion?

Probably the best way to examine the validity of human capital theory is to investigate manpower plans as well as the school curriculum. The argument about whether there were enough college students in the nation never ceased. When the state wanted to suppress the expansion, it compared the ratio of the college population to countries whose ratios were lower than Taiwan's (OGLY, 1966, Pp. 99-100; 1986, Pp. 19-20). When the state wanted to boost the expansion of higher education, the ratio was compared to that of the United States and other countries whose ratios were higher (OGME, 1993a, P. 24).

Other evidence also suggests that the state was aware of the poor quality of manpower planning and the inaccuracy of the data used to create the plans before 1970 (Jenn, et al. 1983). MOE admitted that the expansion of five-year junior colleges were based on a vague estimation rather than a precise prediction (OGLY, 1966a, P. 70). Other studies on the formation of the manpower plans criticized them for being based on the beliefs of some political elite, rather than scientific studies (Chang, 1994). If the manpower plans had been accurate, then the rapid growth of five-year junior colleges in the 1960s would not have led to the oversupply of junior college students in the 1970s.

Examining the school curriculum is also a way to study the link between education and economic development. If the link is strong, one would expect that the quality of the school curriculum would have been high and fit the needs of economic development. However, it was partially out of the concern about the poor quality of teaching and curriculum in private junior colleges that the state decided to freeze their growth. For a period of time, many disciplines in junior colleges either had no textbooks to use or had to use English ones, which was beyond the abilities of many junior college students. The cooperation between schools and the workplace was also weak. Practical training programs were limited and many students who did enroll in them were not learning skills, but were used as cheap labor (OGLY, 1969, Pp. 2-12). It is questionable how much education can contribute to economic development when the formation of the manpower plan was problematic and the curriculum did not meet the needs of the labor market.

In fact, the patterns of growth in Taiwan's higher education expansion was counterproductive. First, many youth who did poorly in the joint entrance examination refused to participate in the labor market. Instead they took the joint college entrance examination more than once to get into the prestigious higher educational institutions. The low labor force participation rates of this group (because they studied for these exams[46] for years and didn't work) was expected to do the economy more harm than good. Second, suppressing the growth of higher educational institutions actually hurt the quality of education and reduced its economic effects. Freezing the growth of private schools sheltered the existing private schools from external competition and made them slow in improving their quality because poor private schools were rarely closed while others had no incentive to do better.[47] For example, after the growth of private schools was frozen for

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[46]. Also the material covered in the exam had little to do with the knowledge and skills needed in the labor market.

[47]. This was especially true when the public schools enjoyed all sorts of advantages (great public funding, better students, lower tuition) while the private ones were subject to many restrictions in tuition, student recruitment, curriculum, and school management. Private schools could not compete with public ones.

thirteen years, the quality of the private higher education was still problematic (Chang, 1989, Pp. 53-58).

B. Higher Educational Expansion as a Result of Conflicts?

The theory of class reproduction has limited explanatory power despite the fact that several characteristics of educational systems in capitalist societies are also found in Taiwan.[48] This is because other characteristics in Taiwan's education system reduces the effectiveness of class reproduction through education. First, tuition before 10th grade is kept very low, which significantly reduces the cost for students from low-income families to pursue education. Second, most students are educated equally in public schools before the 9th grade through standardized curriculum and uniform school schedules. Formal tracking does not start until senior high school. Third, the selection, training, and employment of teachers in elementary and junior high schools are controlled by the state through rigorous examinations, standardized training, and the same payment scales. The equal quality of teaching further assures that students obtain equal education. Fourth, the joint entrance examination system serves as a mechanism to guarantee that those who possess the merits,[49] rather than valuable ascriptive characteristics, will pass the exam. Pushing MOE to open more spaces in higher education does not guarantee that the dominant classes can reproduce their social status through education unless their children can do better than others in the joint entrance exam. In sum, the dual tracks of learning that Bowles and Gintis suggested are not found in Taiwan's compulsory education.

The model of cultural imposition also offers a limited explanation of Taiwan's higher educational expansion for two reasons. First, expanding higher education is probably the least effective way to penetrate the culture of the dominant groups. There was no doubt that the state wanted to quickly stabilize its control in Taiwan by standardizing the thoughts and languages of

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[48]. These characteristics include dual tracks, elite schools, and rigorous examination systems.
[49]. Here it means the ability to do well in the exam.

the citizens and replacing the influences of local culture after the withdrawal from mainland China. However, expanding elementary and secondary education would be cheaper and more effective than expanding higher education. Some might argue that the growth in higher education could be a result of the growth in the lower levels of education due to the needs of cultural imposition, but that wasn't the case in Taiwan in the early years.[50]

Second, the state often imposes limitations on curriculum that hinders the passing on of culture through education. For example, a couple of the schools in the early expansion period were funded by the churches and some were established by Buddhists recently. However, due to the fact that religious instruction and activities were forbidden on campus, students enjoyed great freedom in their religious beliefs.

Liu and Armer (1993) propose that status competition theory provides a better explanation of Taiwan's higher educational expansion than human capital theory. They suggest that higher educational expansion is an outcome of the competition among individuals for valuable credentials in order to distinguish their status from others. This explanation captures the intensive competition in Taiwan's joint entrance examination, a signal of the great social demand for higher education, as well as the lower enrollment rates in the less prestigious schools, a signal of the pursuit of more valuable credentials. But it does not explain the growth of higher education in Taiwan. The competition for valuable credentials rose over time, but the growth of higher education did not necessarily parallel social demands. The state was able to resist those demands either by using the concerns about the quality of education or national economic development or by opening more spaces in vocational higher education to lessen the pressure derived from status competition.

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[50]. One obvious evidence was that the first rapid expansion of higher education ended prior to the announcement of compulsory education to the 9th grade in 1968.

Dependency theory is also limited despite the fact that the educational system in Taiwan resembles those of the "core" in several ways.[51] First, there are differences among higher education in the core countries themselves, like the recruitment of students, the student to population ratio, etc. Second, as discussed in the previous section, some unique features of Taiwan's education system lessened the impact of local and economic elite on educational practices and reduced the connection between social reproduction and educational reproduction. As a result, local and economic elite did not necessarily profit more from educational expansion than others.

The State and Taiwan's Higher Educational Expansion

One common problem in applying the society-centered approach to explain higher educational expansion is that this approach ignores the role of the state. Several questions emerge from a state-centered approach. First, what are the interests of the state in regulating the growth of higher education? Second, why at a particular point in the history would the state want to boost or freeze the rates of growth in higher education?

A. The State's Interests In Regulating Higher Educational Expansion

Education for Nation-Building?

After the withdrawal from mainland China, Taiwan's government exercised great control over every aspect of education, including postsecondary education, to ensure that students were cultivated with the spirit of anti-communism and loyalty to the current political regime. That rigorous control was also expanded to private schools. However, expanding higher education for the purpose of nation-building was very expensive and less effective than the expansion of elementary and secondary education. The state's control over higher education for the purpose of nation-building was manifested in "reactivating" the universities that were lost in mainland China

[51]. For example, schooling years, the degrees offered, and somewhat westernized curriculum.

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to signal the orthodoxy of the political regime,[52] or in controlling the curriculum and instruction of college education, rather than in expanding higher education.

Education for Modernity?

The claim made by the world institutionalists that the state expands schools to signal its membership in the modern world system and enhance its authority and legitimacy is also problematic. The review of the documents suggests that Taiwan's government has been very indifferent to the 'world standard' of higher education until recently[53] (OGME, 1993a, P. 24). Whenever MOE was asked to make international comparisons about the ratio of college students in the population, it responded with its concern about the quality of education or national economic plans. Taiwan's government had other more important concerns than catching up with the world standards when making policies regarding higher educational expansion. First, it was beyond the economic capability of the state to boosting higher education for the purpose of signaling modernity. Second, rising unemployment rates and the fall in income among college graduates due to rapid expansion could significantly reduce the legitimacy and authority of the state before the state was able to demonstrate its modernity and superiority(OGME, 1994, P.34; OGLY, 1994b, P.397; 1994a, P. 204).

Quality Concerns as Political Rhetoric

The state invoked a political rhetoric about the quality of education to justify regulating higher educational expansion. Two pieces of evidence support this claim. First, the state could have chosen other options to improve the quality of education instead of suppressing the growth of private schools. For example, the state could have let market competition drive the poorer schools out of the market. Freezing the growth of private schools without administering effective programs

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[52]. Currently, half of the 14 public universities established after 1950 are named after the universities now under the control of mainland China (MOE, 1995a).

[53]. Mr. Mao was the first Minister of Education that proposed to increase the ratio of college students to catch up with world trends in 1993 (OGME, 1993, P. 24).

to improve the existing ones actually sheltered the private schools from external competition and reduced their incentives to improve their quality of education.

Second, the state accepted the disparity in the quality of education between the vocational and general tracks, and between private and public education. General education was seen as elite education and its quality was maintained through rigorous selection so that only those who had the better talent and abilities were admitted (Huang, 1963, PP.1-5; OGLY, 1987, Pp. 97-98; 1994, Pp. 213-215; OGME, 1993). As seen in Table V, the state had very clear priority regarding its spending on higher education. The proportion of universities and colleges funded by government revenue has been high while the proportion of junior colleges funded by government dropped from .67 to .18. When the major supplier of education in the nation shows little interest and give little input into vocational education, it is not surprising that the status of junior colleges is inferior. Despite the fact that the state claimed vocational and general education was equally valuable and students should not be so enthusiastic in pursuing college diplomas (OGLY, 1965, Pp. 124-125), it actually reinforced the inferior quality and status of vocational education.

Table V: Proportion of Public Higher Educational Institutions by School Type (Values calculated based on MOE, 1995a)

	1950	1960	1970	1980	1990	1994
University	1	0.86	0.67	0.77	0.62	0.65
College	1	0.25	0.31	0.56	0.52	0.49
Junior College	0.67	0.50	0.29	0.27	0.17	0.18

The state was very careful in maintaining the prestige of public universities. This can be seen in the state's monetary input and its other actions, like the selection of the presidents for public universities. Many of the presidents of these universities were either political elite in the government or the KMT party, or became ones after their terms in office. Another recent example

also illustrates the state's efforts to enhance the prestige of public universities. In the preparation period of the National Chung Cheng University, the Vice President was invited to chair the preparatory committee, an action that certainly increased the prestige of that university. Private investment in universities was either not welcomed or prohibited.[54] For example, Minister of Education, Mr. Yen, once made a statement about the impact of the growth in private universities on public universities: (OGLY, 1968, Pp. 2883-2884)

> We do not have an open policy toward private universities. - - - In Taiwan, money is not a problem when opening new schools. Recruiting qualified faculty is a problem. If private universities recruit faculty members from public universities with high salaries, it would ruin public universities. We need to consider the opening of private universities very carefully.

The management of private schools was subject to many restrictions from the government[55], thus hampering their ability to compete with the public schools. As a result, public schools were sheltered from competition from private ones.

The quality of vocational or private higher education was not the primary concern of the state. As shown in the previous discussion, the state's policies actually reinforced a hierarchical system in higher education, worsened the status of vocational and private education, and protected public higher educational institutions from the competition of private ones. Quality concern was more an excuse to justify the state's regulations of the growth of higher education.

The State's Interests and Higher Educational Expansion

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[54]. For example, in the first period of rapid growth, the establishment of private universities was under rigorous investigation. In the second period, universities were not on the list of the type of schools opened to private investment. The increase in private universities was a result of upgrading from current private colleges.

[55]. For example, the tuition, curriculum, instruction, and school management in private universities were all regulated by the government.

Previous discussion has shown that nation-building cannot account for Taiwan's higher educational expansion over the past 45 years since it was both expensive and ineffective to do so. The desire to appear "modern" also cannot explain the growth since it appeared in official documents only once and was soon abandoned due to the concern about rising unemployment rates among college graduates. Findings from the document and the literature reviews also indicate that economic and quality concerns, two of the official reasons justifying the state's intervention in the growth of higher education, inadequately explain the growth of Taiwan's higher education.

The state's ultimate goal in regulating higher education over the past 45 years was to maintain the authority and legitimacy of the political regime. The expansion of public schools has been slower in the past 45 years partially due to the economic constraints of the state. Boosting the growth of public higher education would place great stress on the state`s economy. Furthermore, keeping the unemployment rates among college graduates low by carefully regulating the growth of higher education can increase the credibility, authority, and legitimacy of the state. Maintaining the prestige of publicly-funded higher educational institutions through restricting the development of private education also added to the authority of the political regime. When the state decided to expand higher education in the face of great social demands, privately-funded vocational education was the first to be opened to students. When the state decided to slow down the growth of higher education, economic and quality concerns were used as excuses to justify its policy-making.

B. The Strength of the State and Its Interaction with Social Forces

The state's power to regulate higher educational institutions is situational. Changes in the relative strength between the state and its environment as well as the increasing interdependence between the state and social groups force the state to adjust its educational growth policies in exchange for political support. During the time when the state's power is relatively weak, it has to be more attentive to social demands for higher education while at the same time manage to

maintain the stability and superiority of the political regime and increase the authority and legitimacy of its governance.

In the past, Taiwan's government not only had great interests in controlling higher education, it also had the power to structure higher education based on its plans. Using Fuller's (1991) and Hage & Garnier's (1992) terminology, the government of Taiwan could be called a strong state.[56] Taiwan's government was able to remain indifferent to the pressure for more access to higher education without upsetting its authority and legitimacy. It did so through promoting a merit system of education[57] so that those who failed to pass the exams would blame themselves, rather than the government, through directing the demand for higher education to junior colleges, through showing its concerns for the quality of education and the national economy, through maintaining low unemployment rates and good economic returns for college graduates,[58] and through maintaining a hierarchical educational system which put public institutions on the top.

Thirteen years after the ban of any new private higher educational institutions, the state removed that restriction conditionally in 1985. Because the type of schools open to private input was limited (Appendix 2), the rate of growth in the number of higher educational institutions was not high at the beginning. It then increased faster in the late 1980s due to a period of political liberalization.[59] At that time, the state's strength was weaker than before due to the internal

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[56]. For example, the power of the bureaucrats is great, sometimes even greater than the laws or the Constitution. One example is that five-year junior colleges were established against the Law of Junior Colleges. Another example is that the percentage of educational expenditures did not reach 15% of the state's total expenditures, as ruled by the Constitution, until very recently. The interdependence of the state with its environment has been weak. The state has been quite successful in resisting the social demands for more higher education.

[57]. This doesn't mean that there is no educational inequality in Taiwan. For example, educational inequality existed between rural and urban areas (Lin, 1984).

[58]. The unemployment rates for college graduates were kept below 3% (DGBAS, 1984, 1995) most of the time.

[59]. Several events marked the start of political liberalization. In 1987, the government announced the termination of martial law. New political parties were allowed to be funded. In 1988, former President Ching-Kuo Chiang passed away. Mr. Li,Teng-hui, then the Vice President, became the

political struggles within the government and the external competition from the newly established political parties for votes in the elections. These political changes forced the state to consider the calls for equitable geographical distribution of higher educational institutions from local political elite and the general public in exchange for their political support. The selection of the location for the National Chung Cheng University marked the beginning of the fights for educational resources. The competition was further transformed into a universal request for equal distribution of higher education after the location of the National Chung Cheng University was decided. Local political elite and the local representatives in the Legislative Yuan[60] turned to the government for higher educational institutions in order to "please" their constituencies back home and signal their political achievements.

Concerns about the geographical balance in the distribution of higher educational resources were seen not only in MOE's criteria for reviewing the applications for new higher educational institutions, but also in the traditionally economic-dominated manpower planning since the late 1980s. One obvious indication of the political influences on manpower planning is the announcement of a six-year plan for national development in 1991. One year before the announcement of the six-year plan for national development, the CEPD proposed the tenth economic plan and the manpower plan attached to it. Normally it would have to wait for another four years for the next economic and manpower plan to be proposed, but the Executive Yuan decided to replace the tenth economic plan with the extremely ambitious six-year plan for national development.

President. A series of fierce political struggles and reorganization began as political elite tried to build their own forces. Although Mr. Li was elected as President in 1991, the political struggles did not end.

[60]. Legislators in the Legislative Yuan are selected through local elections. Their main responsibilities include making laws and monitoring the administration of the central government. The President of the Executive Yuan and other central governmental bureaucrats need to conduct oral and written administrative reports to the Legislative Yuan regularly and answer any questions raised by the legislators.

This plan was proposed under the order of Mr. Hao Po-tsun, who was the head of the military before he was appointed as the President of the Executive Yuan by President Li. The announcement of the six-year plan could be seen as the desire of Mr. Hao to signal his political achievements and accumulate his political resources. As indicated in Appendix 2, this plan proposed to establish 25 higher educational institutions and to increase the enrollment ratio of higher education versus the school-age population to 362 per thousand people in five years. It particularly emphasized the concern about equitable geographical distribution and proposed that there would be at least one university in each of the main areas of Taiwan. Compared to the incremental growth of higher education in the past years, this proposal was very ambitious and could not be explained by economic concerns alone. The increasing dependence of the state on the social environment forced the state to be more attentive to the demands for higher education and for equal regional distribution of higher educational resources.

Of course, the state has to pay the price when expanding higher education in exchange for political support. Recently, unemployment rates among college graduates rose due to the rapid expansion. The state's economic constraints also constituted a pressure to the state and forced it to freeze any opening of public higher educational institutions. In the future, the expansion of private institutions is expected to be slow (OGME, 1993b, OGME, 1993c, P.42; OGME, 1994b, P.34; 1994d, P.26) in order to maintain the "quality of education" and reduce unemployment rates.

As one can see, the state was in the continuous process of coping with its internal and external conflicts and pressures after the political liberalization in order to maintain its political stability and enhance its authority and legitimacy. The result of this process affected the expansion of higher education greatly.

A demand-driven higher educational expansion argument that uses social factors to explain the growth in Taiwan's higher education provides limited explanations. The major problem with that approach is that the power of the state is neglected. The state-centered approach would be

more valuable in centralized countries like Taiwan. The previous discussion demonstrates that higher educational expansion in Taiwan is a result of the state's institutional interests and its interaction with the social forces at different points in time.

Conclusion

Higher education in Taiwan experienced dramatic quantitative changes in both the number of institutions and the number of students between 1965-72 and 1985-94. There was also a stationary period between these two periods of dramatic increase due to the ban on creation of new private schools. The patterns of expansion in educational expenditures did not parallel the growth in institutions and students. A significant growth in higher education spending was observed after the late 1980s. That increase was a result of an increase in overall spending on education, rather than a rising emphasis on higher education.

The patterns of growth of higher education has great impact on the hierarchical system of higher education. Private junior colleges are at the bottom of that hierarchical system partially due to their poor quality resulting from the rapid, unplanned expansion in the 1960s and the slim chance for further study resulting from the slow growth in institutes of technology. Public universities enjoy the best reputation partially due to its low tuition and its better quality of education. Their growth has been carefully planned by the government with great monetary input.

Document and literature reviews suggest that models of educational expansion based on a demand-driven approach that focuses on social factors like technological changes or social conflicts have limited explanatory value when studying the growth of Taiwan's higher education. To explain the quantitative changes in education within centralized countries like Taiwan, it is important to take into account the state's interests, strength, and its interdependence with the social environment since demand for higher education was not necessarily met by supply.

Findings from Taiwan's experience also suggest that the explanatory power of each model varies with the level of education under investigation. For example, expanding higher education

for the purpose of nation-building or demonstrating modernity is not only ineffective but also expensive politically.

Concerns about the economy, quality of education, social demands for higher education, and equality in the geographical distribution of higher educational institutions are the official rational for regulating Taiwan's higher educational expansion. However, research findings show that the linkage between economic development and higher educational expansion has been weak. The concern about the quality of higher education is also political rhetoric since the state adopted policies that increased, rather than decreased, the gaps in the quality between public and private as well as general and vocational education.

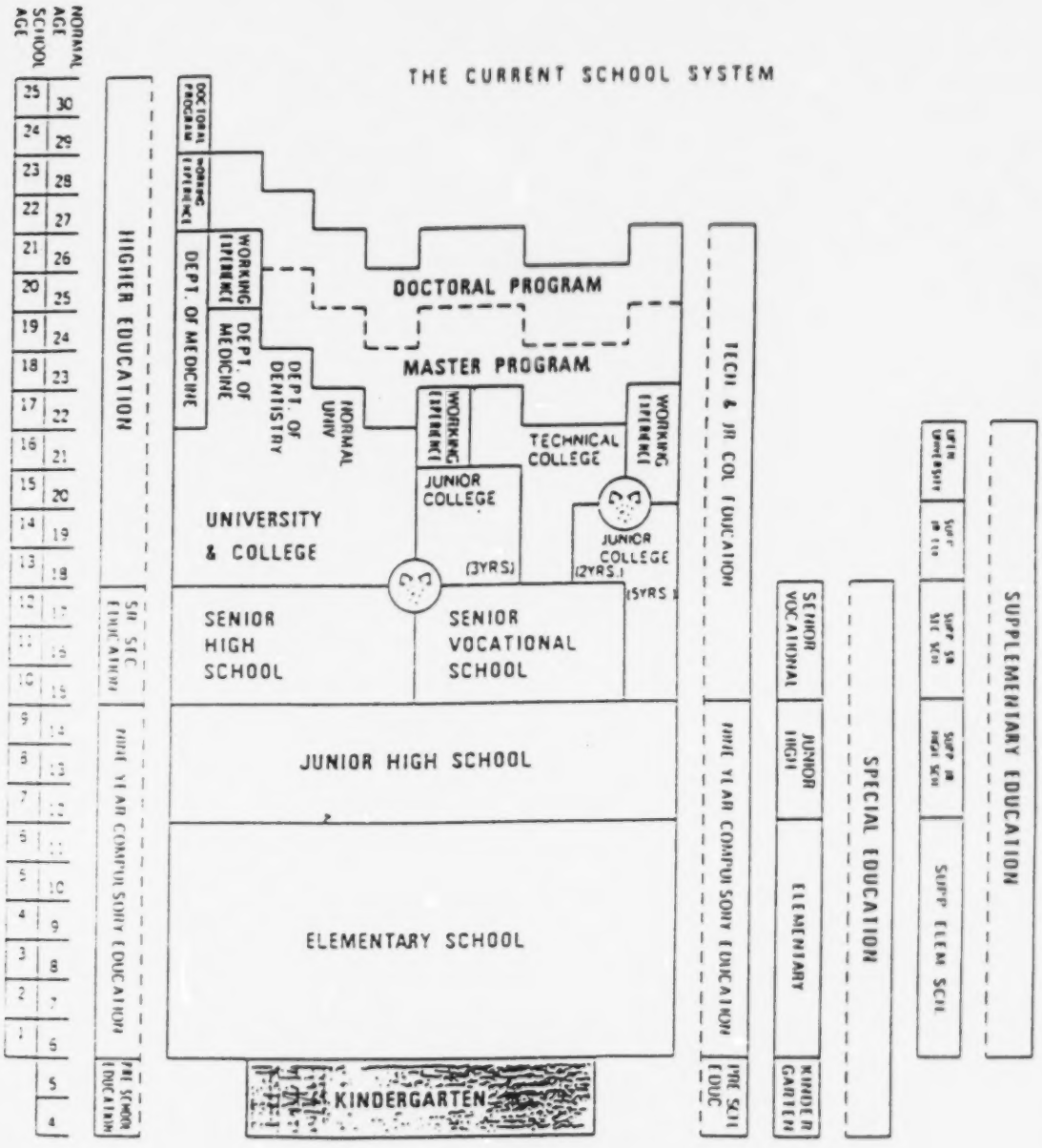
The primary reason why Taiwan's government regulated the growth of higher education was to keep the unemployment rates of college graduates, especially those in the general track, low and enhance the prestige of public institutions in order to maintain the authority and legitimacy of the state. Growth in public higher education was carefully planned and controlled. The state has been quite successful in coping with the social demands for higher education by directing some students towards the vocational track using economic and quality concerns.

However, the state's power in regulating higher education is conditioned by its strength and its interdependence with the social environment. Social demands for higher education and the concern about the equitable distribution of higher educational institutions receive greater attention when the interdependence between the state and its social environments get stronger, as seen in the recent expansion.

The relative strength of supply and demand models in explaining Taiwan's higher educational expansion as well as the impacts of the dynamics among political elite and public organizations in determining educational policy-making regarding educational growth at different points of time was not examined. On the one hand, the degree to which policy makers could remain indifferent to the influence of social forces when making decisions regarding the growth of

higher education is still questionable. A regression model based on time series analysis that incorporates the variables on both the supply and demand sides may reveal part of the answer. On the other hand, interactions among political elite and public organization is rarely explored. A qualitative investigation can also shed light on the impact of these interactions among political elite and public organizations.

Appendix 1 (Source: Ministry of Education, 1995a)



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Appendix 2: Historical Events Related to Higher Educational Expansion*

Year	Minister of Education	Historical Events
1949	Hang, Li-wu	R.O.C. lost the battle with the Communist Party and withdrew from Mainland China to Taiwan.
1950	Cheng, Tien-fan	The first private junior college in Taiwan was established. Public Junior College: 2. Private Junior College: 1. Public College: 3. Private College: 0. Public University: 1. Private University: 0.
1953		The first four-year economic plan (1953-1956) was proposed.
1954	Chang, Chi-yun	The first private college was established. The Private School Regulations was modified to simplify the procedures for establishing private schools. Public Junior College: 6. Private Junior College: 1. Public College: 3. Private College: 2. Public University: 2. Private University: 0.
1955		The first private university in Taiwan was established.
1958	Mei, I-chi	
1959		Public Junior College: 5. Private Junior College: 3. Public College: 2. Private College: 5. Public University: 6 Private University: 1
1957		The second four-year economic plan (1957-1960) was proposed.
1960	Huang, Chi-lu	
1961		The third four-year economic plan (1961-1964) was proposed.
1964		Report on "The Problems of Educational Planning in Economic Development" by Stanford Research Institute was finished. The key suggestions related to higher educational expansion are listed as follows: 1. Increase the supply of semi-technicians and technicians. 2. Enhance the quantity and quality of vocational education at the level of senior high schools and junior colleges. 3. Engineers, school teachers, and economic professionals were oversupplied. Growth in colleges and universities should be frozen unless it's relevant to national economic development. The team for manpower planning under CIECD was formed. Public Junior College:12. Private Junior College: 8. Public College: 1. Private College: 10. Public University: 8 Private University: 2.

1965	Yen, Chen-hsing	The fourth four-year economic plan (1965-1968) was proposed. A new form of junior colleges, five-year junior colleges, started to develop.
1966		The first plan for manpower development was proposed by CIECD. The key conclusions related to higher educational expansion are listed as follows: 1. The growth of higher education should be guided by manpower planning. 2. Emphasize vocational education and increase the quality of the manpower and improve the quality of universities. 3. Expand technological programs in two-year and five-year junior colleges and reduce the ratio of students in commercial and agricultural programs. 4. Encourage private input in educational investment, especially junior colleges of technology, as long as it's related to the plan of economic development. 5. Establish two-year and three-year programs in five-year junior colleges to accommodate the graduates of junior high schools.
1967		The Ministry of Education announced that any applications for opening five-year junior colleges submitted after June would not be considered due to the heavy attacks on the poor quality of education and the problems of school management in current five-year junior colleges.
1968		Nine-year compulsory education was announced and implemented. Guidelines for the curriculum and school facilities of five-year junior colleges was announced by MOE. The second plan for manpower development was proposed. Key conclusions related to higher educational expansion are listed as follows: 1. Expand vocational education. Five-year junior colleges should be devoted to the preparation of practical and technological manpower. Encourage the industries to establish two-year technological and craft-oriented junior colleges to accommodate senior high school graduates and supply the manpower needed for economic development. 2. Change the current occupational structure. Reduce the manpower in agricultural, fishing, forestry, and animal husbandry sections. Increase the manpower in industrial and service sections. 3. Higher educational expansion should be carefully planned and adjusted based on the needs for advanced manpower. 4. The ratio among senior vocational students, junior college students, and college and university students was 3:1:5 in 1967. It should be 3:3:2 in 1972, and 4: 4: 2 in 1977. 5. The ratio of general senior high school students versus the vocational senior high school students should be 5:5 in 1972 and 6:4 in 1977.
1969	Chung, Chiao-kuang	Committee on Education of the Legislative Yuan conducted an evaluation on the quality of five-year junior colleges because it had drawn great criticism. The fifth four-year economic plan was proposed. Public Junior College:20. Private Junior College: 49. Public College: 4. Private College: 9.

		Public University: 6 Private University: 3.
1971		The third plan on manpower development was proposed. The key suggestions related to the expansion of higher education are listed as follows: 1. Educational expenditure will reach 6% of the GNP in ten years. The government should encourage private input in education. Private input should be directed to vocational or junior college education. Public expenditure should be devoted to elementary, secondary, and college education. 2. Expand two- and three-year technological and craft junior colleges to accommodate graduates from senior high schools and provide chance for advanced study to excellent vocational senior high school graduates. 3. Control the expansion of five-year junior colleges and focus more on the improvement of its quality.
1972	Chiang Yen-shih	The Executive Yuan announced that it would not consider any applications for opening private schools until the quality of existing ones were improved.
1973		The sixth four-year economic plan was proposed. The fourth plan on manpower development was proposed. The key suggestions related to the expansion of higher education are listed as follows: 1. Increase the ratio of advanced technological manpower from 31.5 per thousand people to 63 by 1981. 2. Encourage private investment in education. 3. Vocational and junior college education should focus more on quality improvement. Any expansion should consider drawing in private resources. 4. Control the expansion of general senior high school students to reduce the intensive competition in Joint College Entrance Examination and reduce their unemployment rates. 5. The ratio of science-majors to humanities-majors should be 55 to 45 in four years. Slow down the expansion of the disciplines in humanities and social science. 6. Establish institutes of technology.
1974		The first institute of technology was established through the funding from the World Bank. Public Junior College:20. Private Junior College:56. Public College: 6. Private College: 9. Public University: 6. Private University: 3.
1976		The Junior College Law was modified. Based on this law, the status of the five-year junior colleges was made legal. The Six-year economic plan was proposed (the seventh economic plan). The project of manpower development was proposed. The key conclusion related to higher educational expansion are listed as follows: 1. The ratio of vocational senior high school students versus general senior high school students will be 7 to 3 by 1981. 2. Improve the quality of vocational education. Increase the proportion

		of junior college graduates from 2.79% to 3.9% by 1981. 3. The proportion of university & college graduates will be increased from 3.2% to 4.2 % by 1981. The primary focus of expansion will be the engineering disciplines. The rate of increase for the number of college and university students shouldn't exceed 3% per year. Match the supply of university and college students with the demand in the labor market by adjusting the departments and disciplines.
1977	Li, Yuan-tsu	
1978	Chu, Hui-sen	
1979		Public Junior College: 20. Private Junior College: 55 Public College: 5 Private College: 10. Public University: 8 Private University: 3.
1980		The ten-year economic plan was proposed. The plan for manpower development in the ten-year economic plan was announced. The key suggestions related to higher educational expansion are listed as follows: 1. Control the expansion of junior colleges to ease the pressure of the oversupply of junior college graduates from 1980 to 1984. 2. The supply of manpower at the university and college level will be short. 3. Establish the second institute of technology in the southern area.
1982		The eighth four-year economic plan was proposed.
1984	Li, Huan	Public Junior College: 21. Private Junior College:56. Public College: 6. Private College: 6. Public University: 9. Private University: 7.
1985		The Executive Yuan agreed to abolish the policy prohibiting the establishment of private schools under some conditions. Types of private schools allowed to open include colleges of engineering, institutes of technology, medical colleges, two-year junior colleges of commerce & nursing, five-year junior colleges of technology. The team on manpower planning under CEPD was promoted to the level of department.
1986		The Executive Yuan agreed to reactivate the National Chung Cheng University in central Taiwan. This announcement ignited intensive fights among local political elite for that university as well as the demands for geographical balance in the distribution of higher educational institutions afterwards. MOE decided to gradually expand the number of five-year junior college students in order to increase the quality of technological manpower. The ninth four-year economic plan was proposed. Mid-term and long-term manpower plans were proposed.
1987	Mao, Kao-wen	The first private college was opened after the government removed the

restrictions on the establishment of private schools.
MOE announced the rules of upgrading the senior vocational schools to junior colleges in order to increase the quality of technological manpower and to balance the distribution of higher educational institutions.

1989

The Executive Yuan announced that more institutes of technology will be built to expand technological and craft education. It also decided to build a university in east Taiwan in order to balance the distribution of educational resources.

Public Junior College:13.	Private Junior College:62.
Public College: 13.	Private College: 7.
Public University: 13.	Private University: 8.

1990

The tenth economic plan was proposed.
The plan on manpower development was proposed. The key suggestions related to higher educational expansion are listed as follows:
1. The manpower at the level of junior college is still oversupplied. On the contrary, the manpower at the university and college level is undersupplied.
2. Increase the proportion of university and college students in higher education.
3. The ratio humanities-majors and science-majors in colleges and universities should be 50: 50.
4. Establish a university in east Taiwan to increase the geographical balance in the distribution of educational resource.
Educational expenditures by the central government finally meets the requirement of the Constitutions (15% of the total expenditures of the central government).

1991

MOE considered abolishing three-year junior colleges and making two-year and five-year junior colleges the focus of junior college education. Current qualified three-year junior colleges will be upgraded to general or technological colleges.
MOE further expanded the types of higher education to include private input. Only universities, institutes of technology, and three-year junior colleges were excluded from the list open for private input. The review of applications would be based on the needs for national and local development, the balance in the distribution of educational resources, and the supply and demand of manpower.
The six-year plan for national development was proposed. The key suggestions related to higher educational expansion are listed as follows:
1. Establish 25 junior colleges, colleges and universities in five years. There will be four in the north, five in the center, fourteen in the south and two in the east.
2. Upgrade four junior colleges to colleges of technology or colleges of arts.
3. Both the quantitative and qualitative development of higher education will be emphasized.
4. The enrollment ratio of higher education versus the school-age population will be 362 per thousand people in five years.
5. Improve the geographical balance in the distribution of higher education. Each main area of Taiwan should have at least one university.

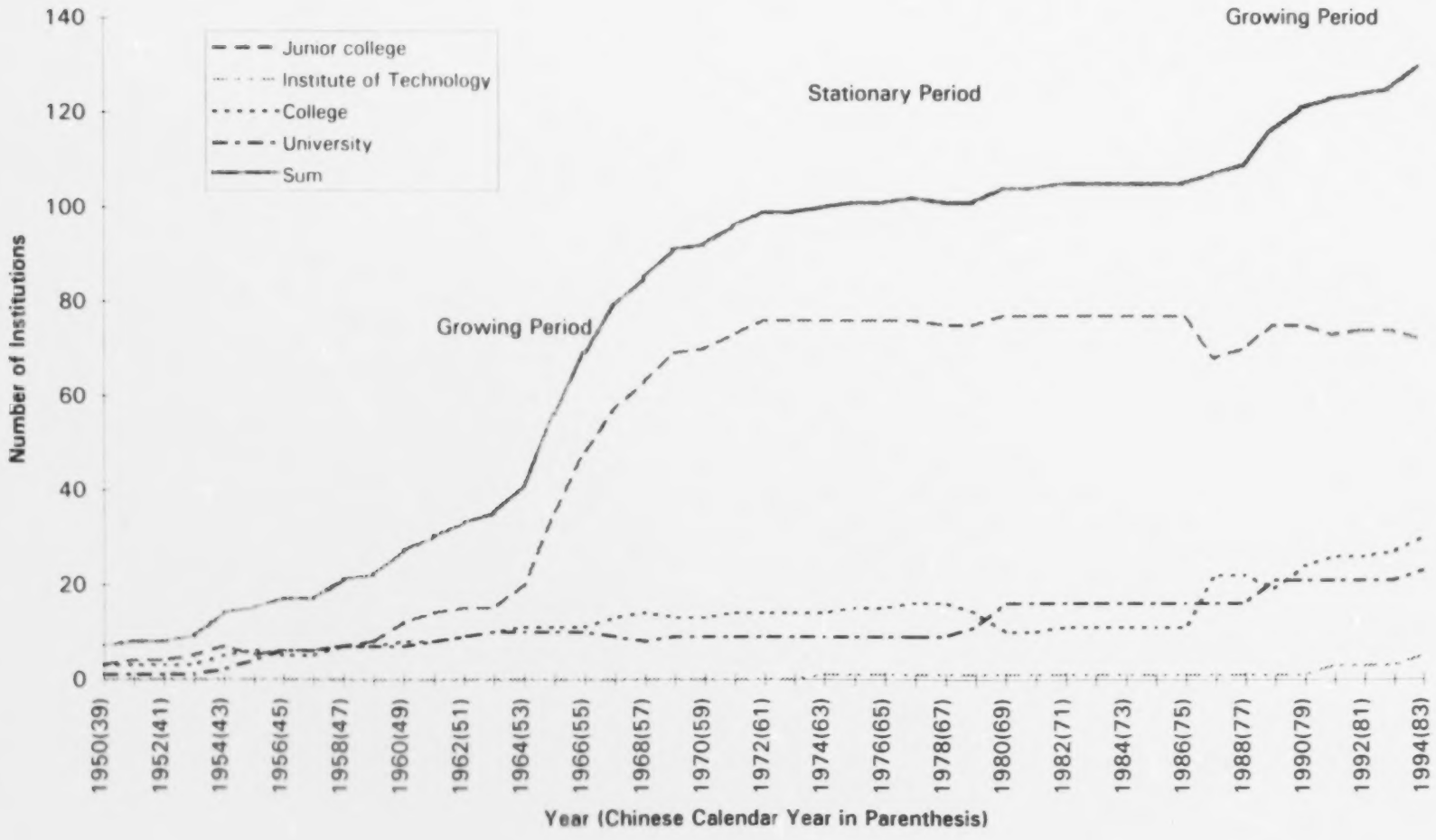
		Establish national junior colleges. Encourage private investment in higher education, especially at the place where the quantity of the higher education is low.
1993	Kuo,Wei-fan	MOE announced that it will increase the percentage of college and university students to 18% of the population by the year 2000. MOE announced a freeze in the expansion of higher education. Colleges of technology will be opened within universities in order to accommodate the needs for advanced technological education.
1994		The project on manpower development was proposed. The key suggestions are listed as follows: 1. Slow down the expansion of higher education and focus more on the improvement of its quality. 2. The supply of advanced manpower is still not adequate. Encourage private investment in higher education. 3. Improve the geographical balance in the distribution of higher educational institutions. Public Junior College:13. Private Junior College:59. Public College: 17. Private College: 18. Public University: 15 Private University: 8.

*Table created based on MOE, 1995a; MOE, 1993b; the plans for manpower development from CEPD and CIECD from 1966 till now; the Official Gazette of the Legislative Yuan from 1950 till now; the Official Gazette of the Ministry of Education from 1975 till now; the third, fourth and fifth educational yearbook of R O C .Huang, 1961, 1963; Education and Culture, 1967b; Chen, 1993, and Chang, 1994.

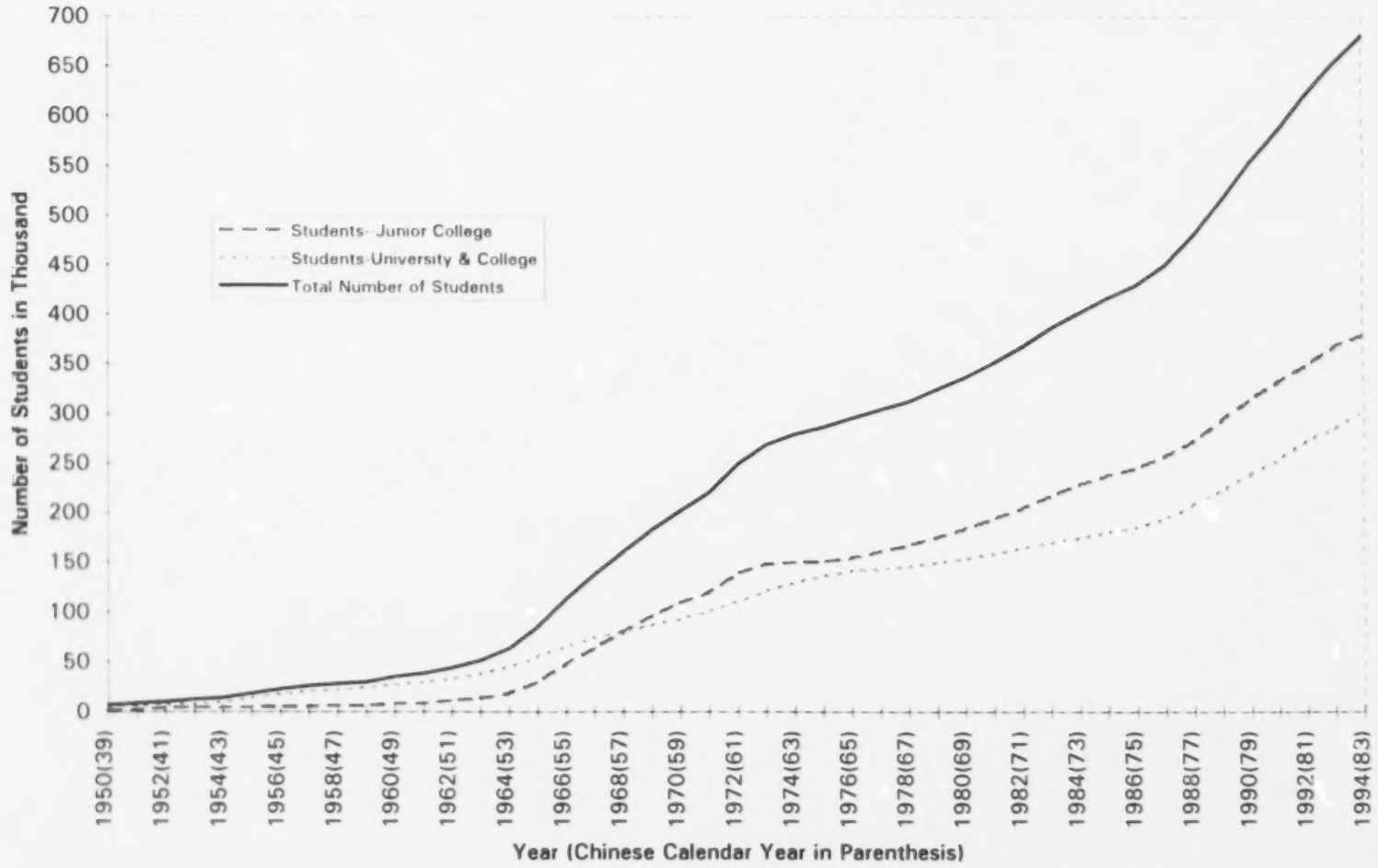
Appendix 3: Official Documents Reviewed

Title	Period	Content
Official Gazette of the Legislative Yuan	1950 till now	Word-by-word records of the meetings of the Legislative Yuan
Official Gazette of the Ministry of Education	1975 (Vol. 1) till now	Official monthly publication of the Ministry of Education, which includes the changes in laws, rules, regulations, and policies related to education as well as the summaries of important news in education.
Educational Yearbook	Vol. III, IV, and V	Irregular official publications of the Ministry of Education, which include detailed historical reviews of almost every aspect of education.
Manpower Plans	1966 till now	Proposed by the Council for Economic Planning and Development and the Council for International Economic Corporation and Development under the Executive Yuan.

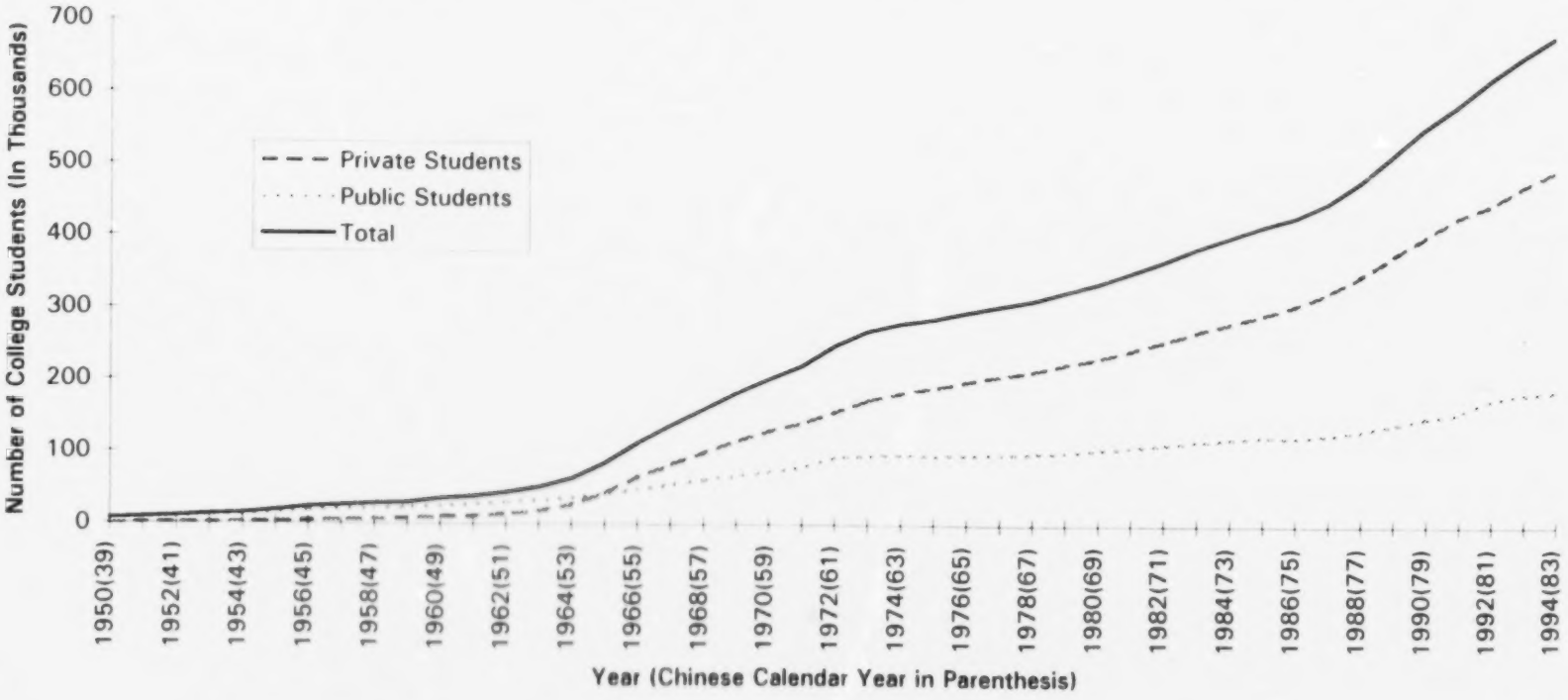
Appendix 4: Higher Educational Expansion inTaiwan from 1950-1994--by Type of Institution



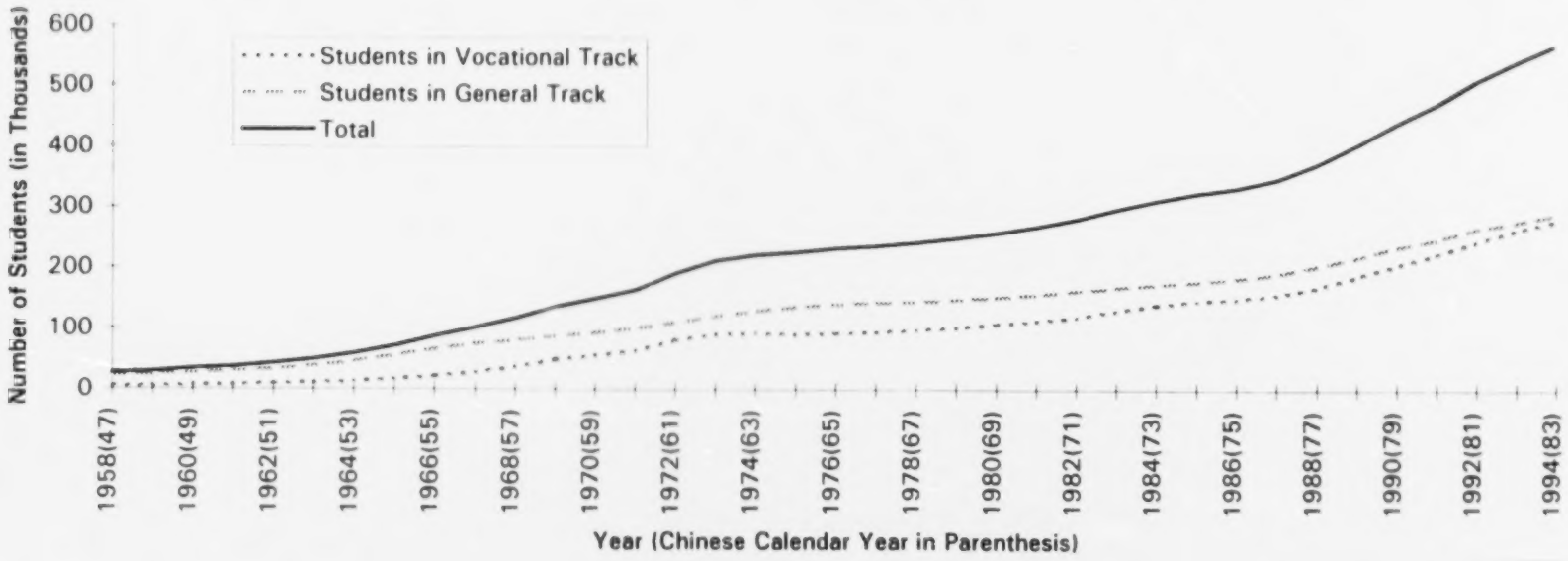
Appendix 5: Number of College Students--by Type of Institution (First-three-year students in five-year junior colleges not excluded. Data source: MOE 1995a)



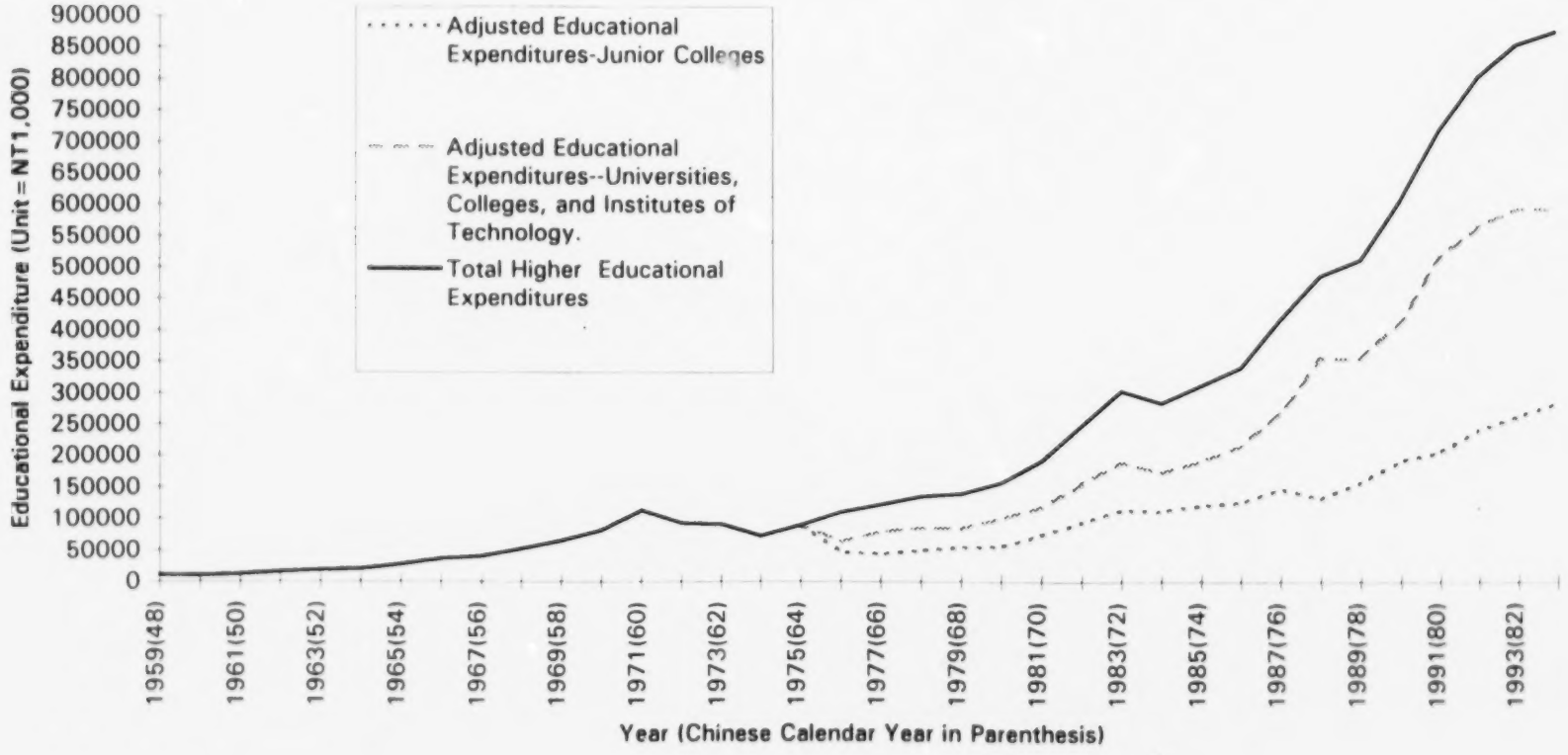
Appendix 6: Changes in the Number of College Students--Public vs. Private (First-three year students of five-year junior colleges were not excluded. Data Source: Ministry of Education, 1995a)



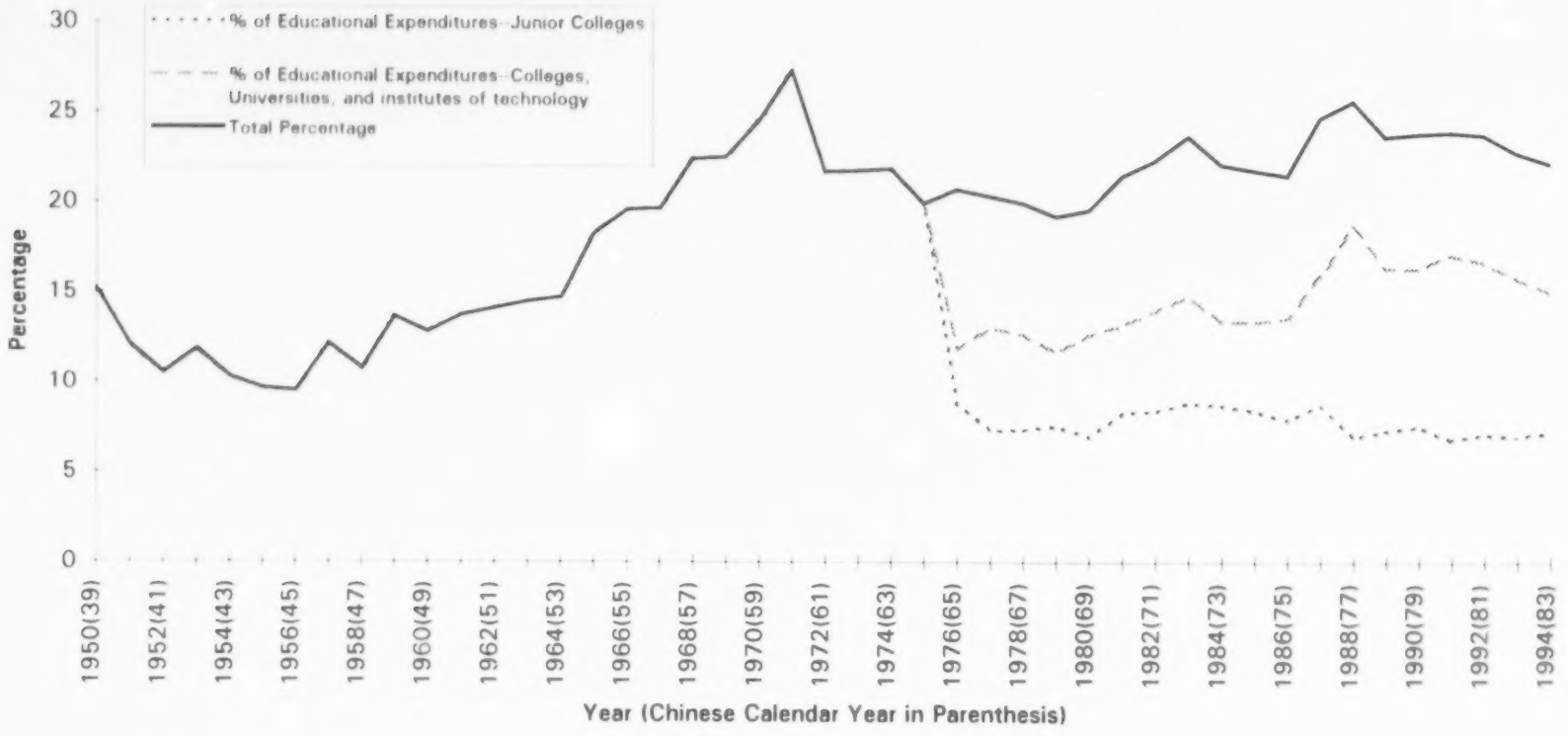
Appendix 7: Changes in the Number of College Students--Vocational vs. General Track (First three-year students in five-year junior college were not excluded. Data Source: MOE, 1995a, Department of Statistics, MOE)



Appendix 8: Higher Educational Expenditures--by Type of Institution (1991 = 100. Data Source: MOE, 1995a; DGBAS)



Appendix 9: Higher Educational Expenditures as % of Total Educatioanl Expenditures



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